
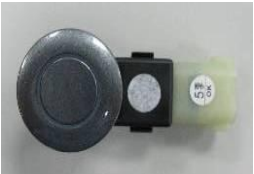




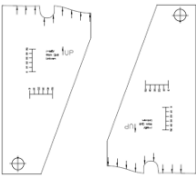


INSTALLATION MANUAL REAR PARKING SENSOR SYSTEM



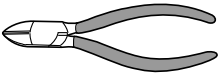






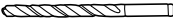

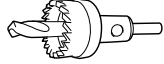
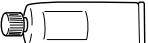

Thank you for your purchase of MITSUBISHI genuine * PARKING SENSOR SYSTEM * This manual explains the procedure for fitting * PARKING SENSOR SYSTEM * . Read this manual before installation to ensure correct installation .

PART NUMBER	APPLICABLE MODEL
MZ380467EX	i-MiEV

COMPONENT PARTS

1.ECU 1PCS 	2.SENSOR 2PCS 	3.WIRE HARNESS 1PCS 	4.BUZZER 1PCS 
5.C-CLIP 2PCS 	6. SPONGE 10PCS 	7.CABLE TIE 10PCS 	8.Sensor Fix Paper 2PCS 

Tools necessary for installation

SCREWDRIVE 	WRENCH (10mm) 	DIAGONAL CUTTERS 	CENTER PUNCH 	ORNAMENT REMOVER 
MASKING TAPE 	DROP CLOTH 	SAFETY GLASSES 	PLIERS 	DRILL BIT (3mm) (15mm) 
DRILL 	HOLE SAW (26mm) 	WATER PROOF SEALANT 	ALCOHOL 	


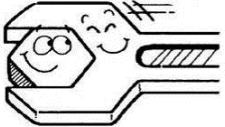


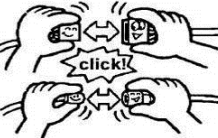
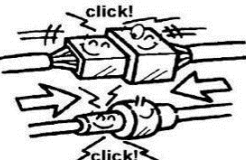
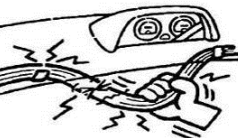

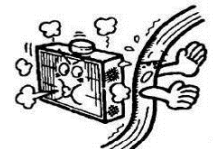



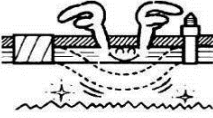
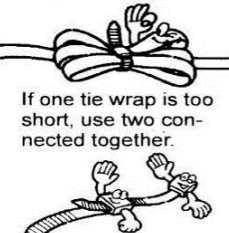


Precautions

- 1. This system is designed to assist the driver with parking the vehicle. The system operates by detecting ultrasonic waves that are reflected by obstacles behind the vehicle. This system is an aid for backing up only and is not a substitute for your visual confirmation.**
- 2. Due to the time requirement of the ultrasonic waves to be sent out and reflected while moving backwards, please use speeds under 10km/h to move backward.**
- 3. While using this system to move backward, please turn down the volume of the radio, so as not to drown out the sound of the warning.**
- 4. Prevent brute force or high-pressure washes from directly impacting the sensor. It is easy to damage the sensor device.**
- 5. Snow, mud, water droplets, foreign matter, etc. covering the sensor device may cause the device to falsely detect. The device should be kept clean at all times.**
- 6. The following obstacles are known to cause difficulty in detection, please note:**
 - ※Sharply angled barriers.**
 - ※Cotton, snow, etc are apt to absorb the object of the sound wave.**
- 7. The following situations may lead to a false detection by the sensor, please note:**
 - ※While moving backward in a road full of bumps and holes. Reversing on a gravel road, grass road or up a road with a slope.**
 - ※When the height of the automobile's rear shortens because of a heavy load.**
 - ※When ultrasonic waves from another vehicle are present nearby.**
 - ※There is an environmental noise (40KHZ).**
- 8. This system is only suitable for a vehicle using 12V.**
- 9. The product is composed of two center back sensors. Please pay attention when reversing the car.**
- 10. After installing, please hand over the manual to the customer.**


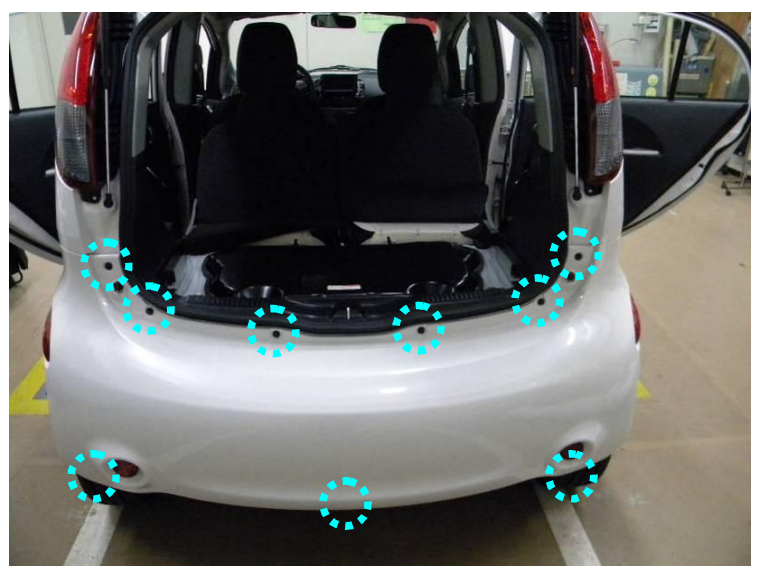
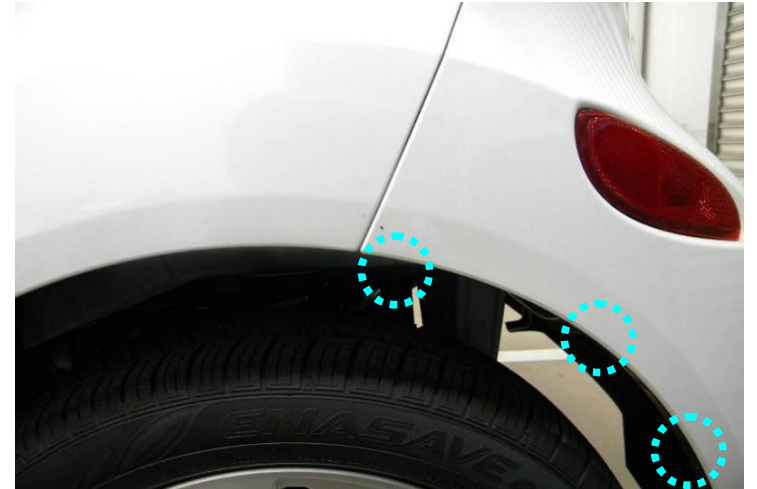
Main Checkpoints

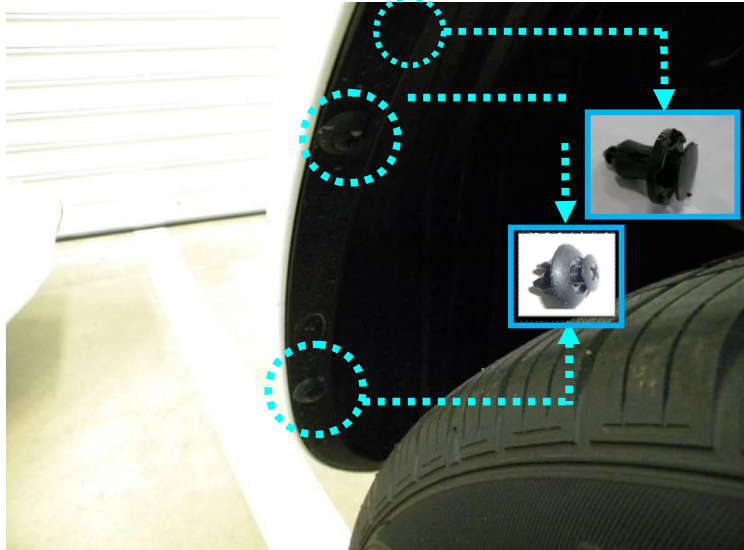
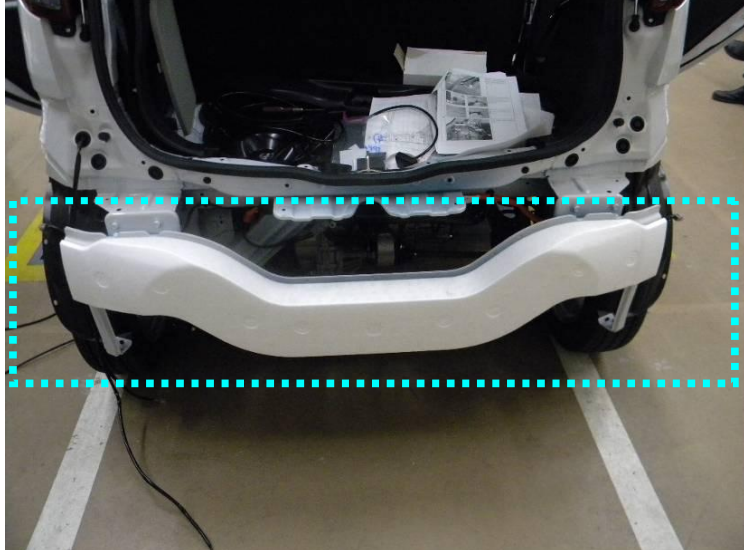
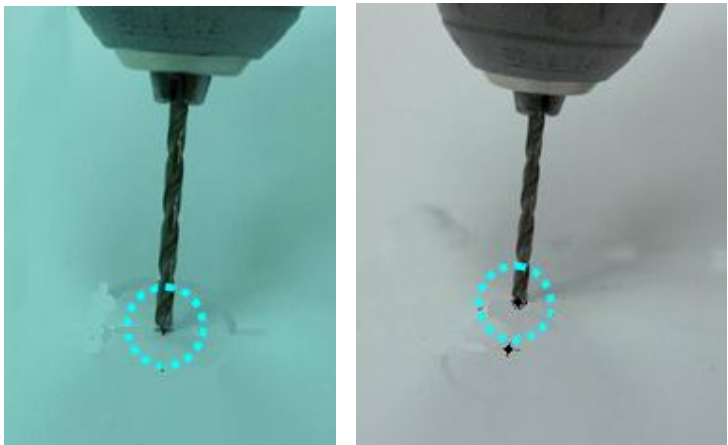
※ Before Installation:


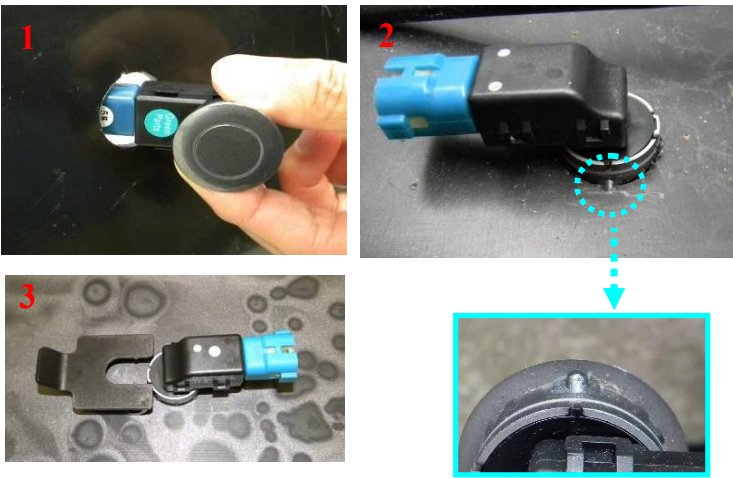

Start and stop the engine and check if the power system functions properly, such as door locks and the power ignition system. Open the rear tail-gate.

<p>Before installation</p> <ul style="list-style-type: none"> Be sure to disconnect the negative terminal cable from the battery. 	<p>When installing or removing parts</p> <ul style="list-style-type: none"> Loosen or tighten bolts and nuts using tools that match their sizes. Use a Phillips screwdriver that fits the recess in the head of the screw being loosened or tightened.  		<ul style="list-style-type: none"> To remove plastic parts, use a trim remover. 
<p>Wiring</p>			
<ul style="list-style-type: none"> When disconnecting connectors, first unlock them, then separate the connectors by pulling on themselves, not on cables. 	<ul style="list-style-type: none"> When connecting connectors, push them against each other until the lock clicks. 	<ul style="list-style-type: none"> Do not pull on wiring harnesses strongly. 	<ul style="list-style-type: none"> Do not let harnesses be pinched between parts. 
<ul style="list-style-type: none"> Route the harness away from hot components such as the engine and radiator. 	<ul style="list-style-type: none"> Protect the harness from sharp edges by covering the edges with tape or other suitable materials. 	<ul style="list-style-type: none"> Apply sealant to grommets at portions where the harness run through. 	<ul style="list-style-type: none"> Do not fasten the harness to brake pipes or high pressure air conditioner pipes. 
<p>Clamping harness</p> <ul style="list-style-type: none"> Fasten the additional harness to an existing vehicle harness using tape or tie wraps. 	<ul style="list-style-type: none"> Bind up extra length of the harness using a tie wrap. If one tie wrap is too short, use two connected together. 		<p>After installation</p> <ul style="list-style-type: none"> Check the product and wiring for installed condition before connecting the cable to the battery. Check the installed product for function. Also check lamps, horn, wipers, etc. for proper operation.  

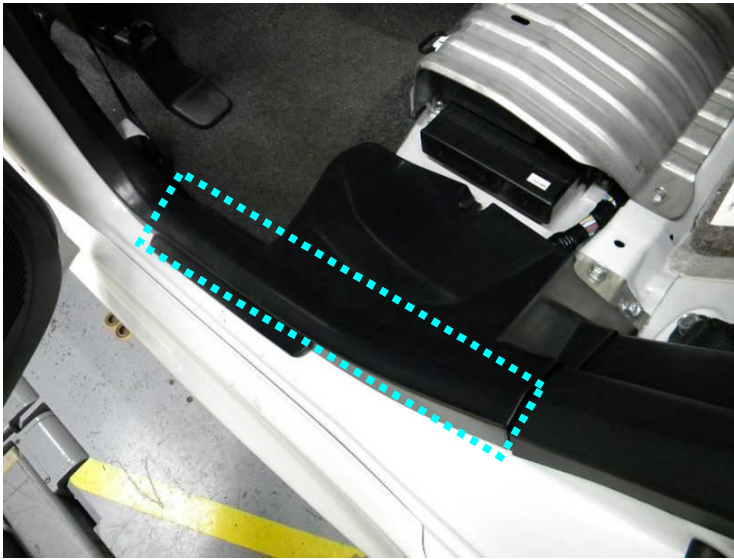
Disassembly and installation instructions

1	 A rear view of a white car with its trunk open. A white rectangular sensor template is placed on the bumper. The template has a small hole in the center and is positioned to mark the pilot-hole locations for the bumper fasteners.	<p>1. Put the left Sensor template on bumper as shown in the picture. Mark the pilot-hole locations with a punch. (the left template can be flipped over for the right side)</p>
2	 A rear view of the white car with its trunk open. Nine red dashed circles are overlaid on the image, marking the locations for removing the rear bumper fasteners. Three circles are on the bumper itself, and six are on the rear fenders (three on each side).	<p>2. Remove the rear bumper fasteners (9 locations)</p>
3	 A close-up view of the rear fender area of the white car. Three red dashed circles are overlaid on the image, marking the locations for removing fasteners inside both of the rear fenders. The circles are located on the inner surface of the fender, near the rear wheel well.	<p>3. Remove fasteners (3 locations) inside both of the rear fenders.(The picture shows the left side only)</p>

<p>4</p>		<p>4. After removing the fender fasteners on both the right and left side, the rear bumper can be removed.</p> <p>CAUTION :</p> <p>(1)Disconnect the light harness before fully removing the bumper.</p> <p>(2)Add masking tape to the edge of fender to protect the paint when removing the bumper.</p>
<p>5</p>		<p>5. Remove the inside bumper styrofoam.</p>
<p>6</p>		<p>6. On the removed bumper, drill a 3mm pilot hole at the locations previously marked with the punch.</p>

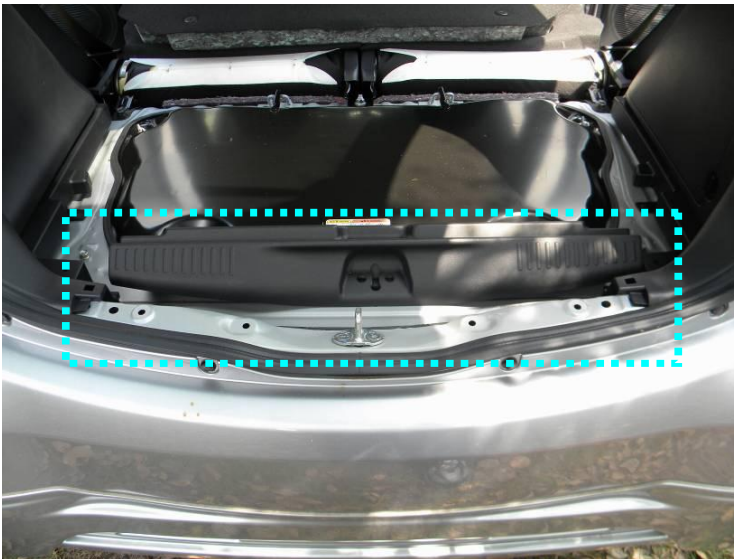
7	 <p>Towards Bottom of Bumper</p>	<p>7 Use a 26mm hole-saw to drill out the sensor locations on the bumper. Take care to center the hole saw to the pilot hole closest towards the bottom of the bumper.</p>
8		<p>8-1. Position the sensor into the hole. 8-2. Adjust the sensor so that the notch on the sensor alligns with the notch in the drilled out hole. 8-3. Install the hook for the back side of the sensor and check for secure fitment</p>
9		<p>9. Remove the rear seat by lifting it in the direction of the arrows in the picture.(No tool required)</p>

10



10. Dismantle the left rear Side scuff plate.

11



11. Remove the clips and fasteners from the rear end trim in the picture.

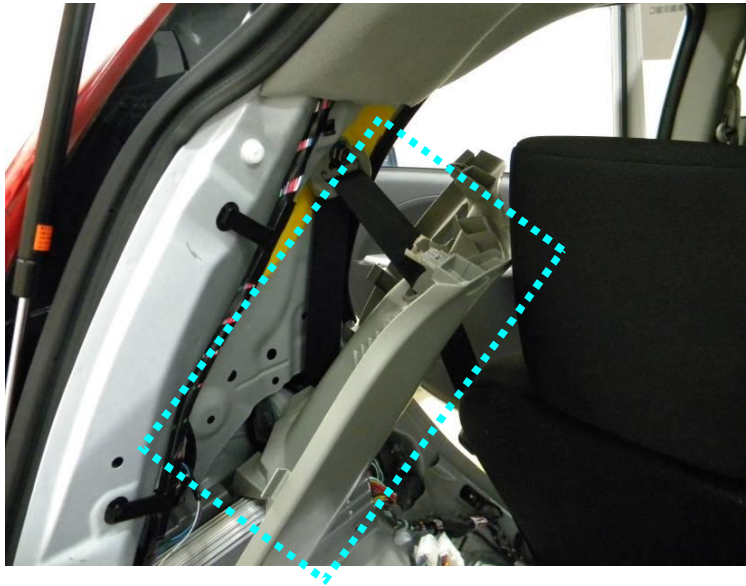
12



12. Dismantle the lower left quarter trim panel.

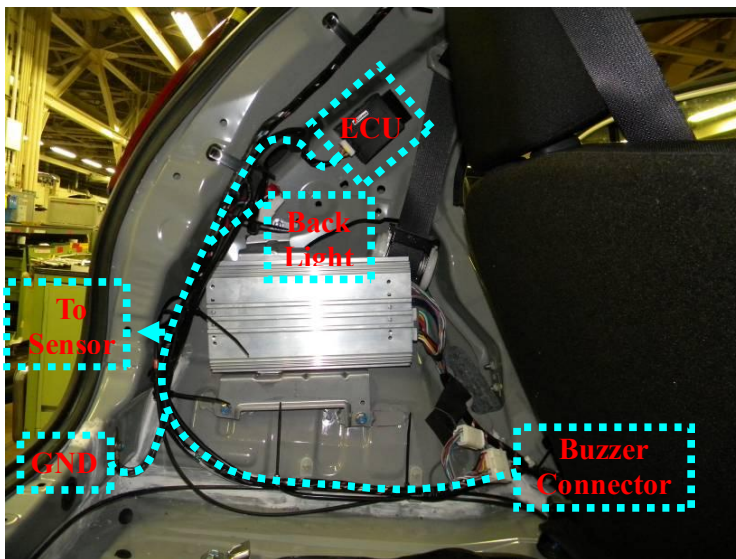
CAUTION :
Use a drop cloth to cover the top edge of the quarter trim panel before removing.

13



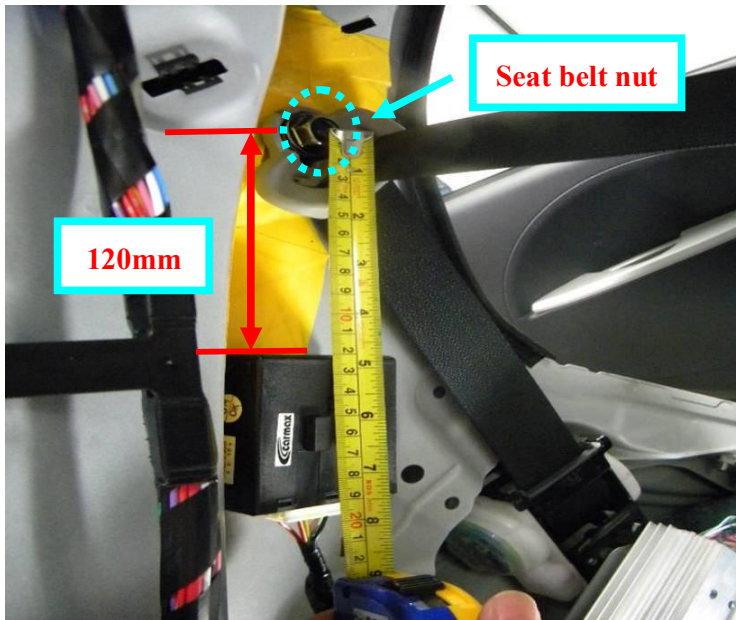
13. Dismantle the upper left quarter trim panel.

14



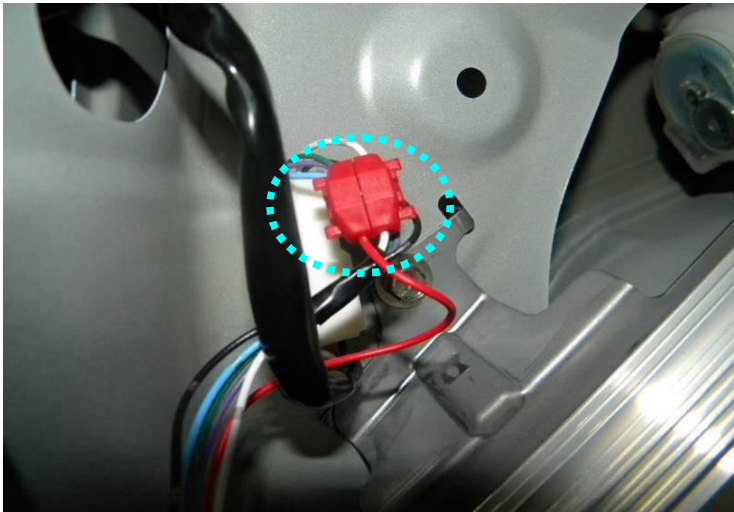
14. Route the harness as shown below.(positions of ECU, Buzzer, GND , Back Light Splice)

15



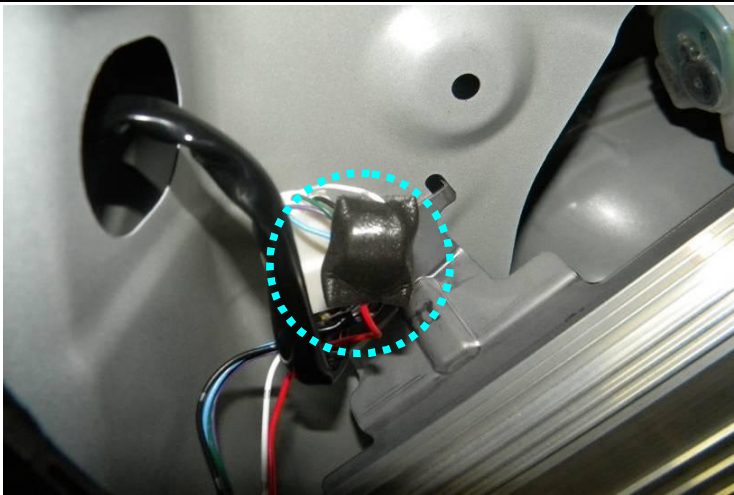
15. Install the ECU in the location as shown, using the adhesive tape on the back of the ECU.

16



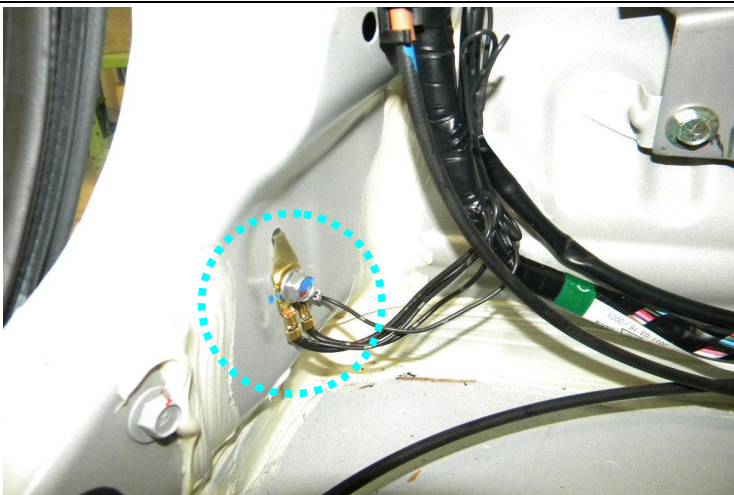
16. Splice the white wire of the Back Up Light system for power.

17



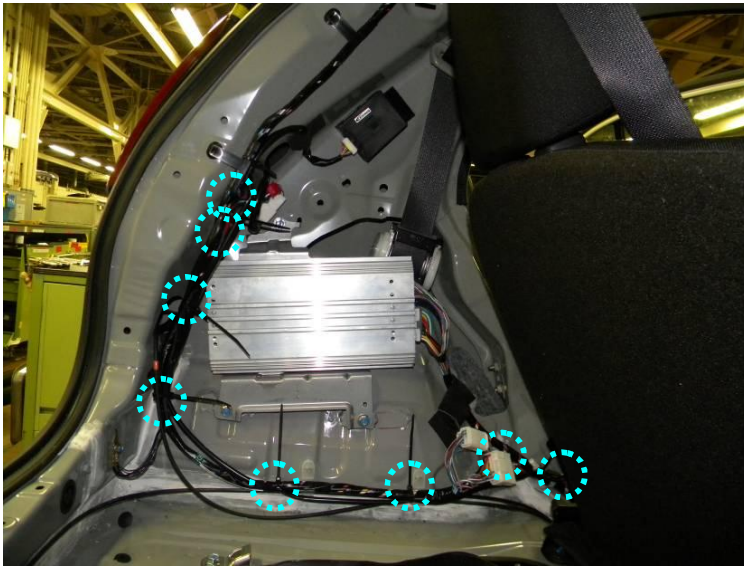
17. Wrap the splice connector with sponge tape.

18



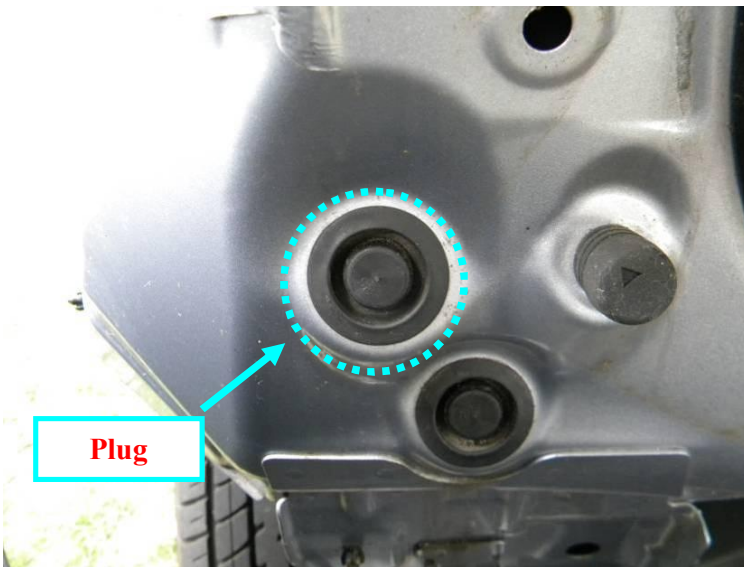
18. Connect the harness to the ground location as shown in the picture.

19



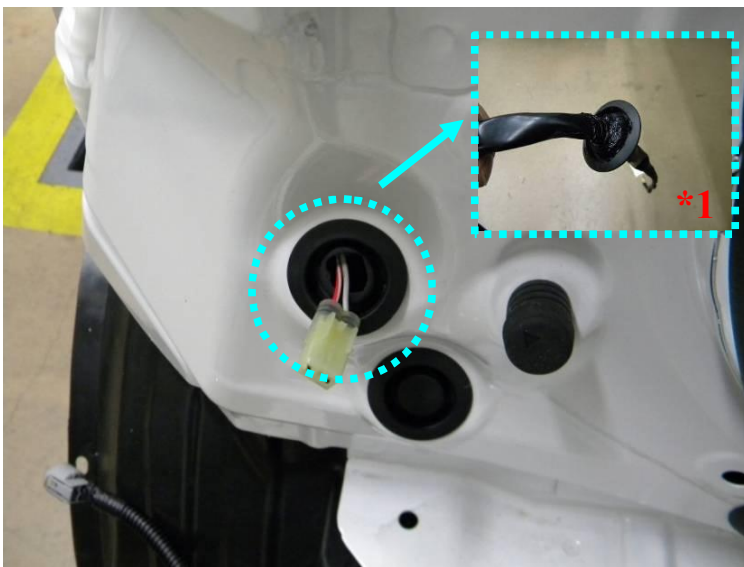
19. Zip-tie the harness in the locations as shown. (8 locations)

20



20. For vehicles without rear end harnesses, make a small cross slit on the plug with a knife to allow the "Sensor harnesses B" to fit through it.

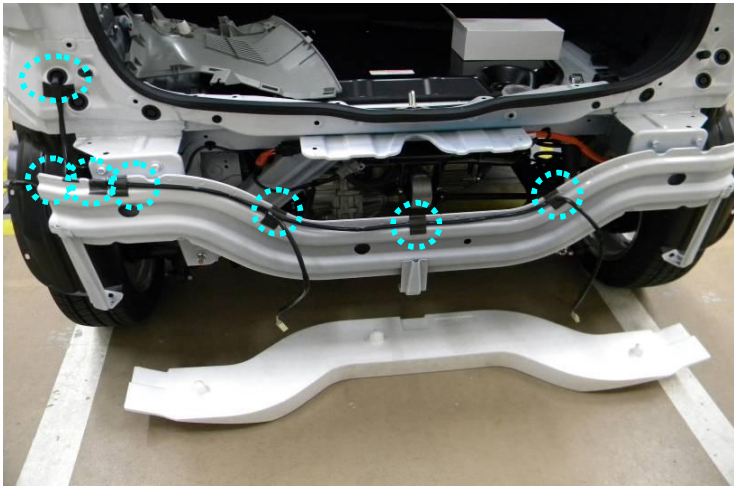
21



21. Route "Sensor harnesses B" through the plug and along the rear of the vehicle.

***1: Water-proof sealant has to be applied to the plug after routing the harnesses through it.**

22

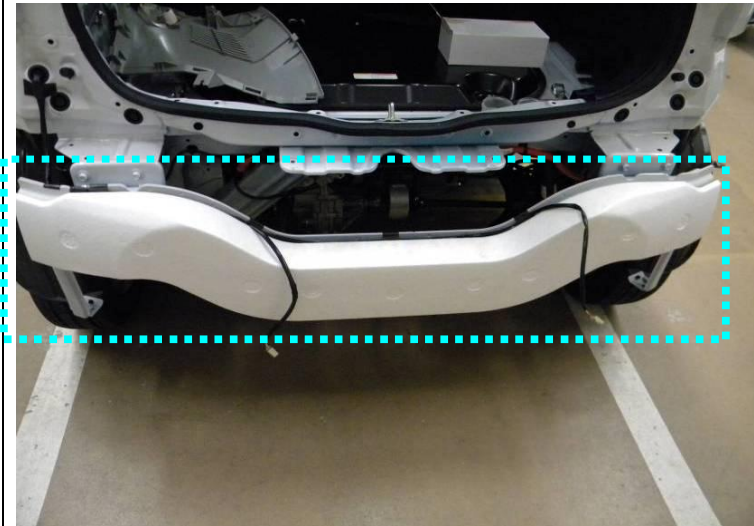


22. Route the harness as shown below and tape the harness at the circled locations (7 location)

CAUTION :

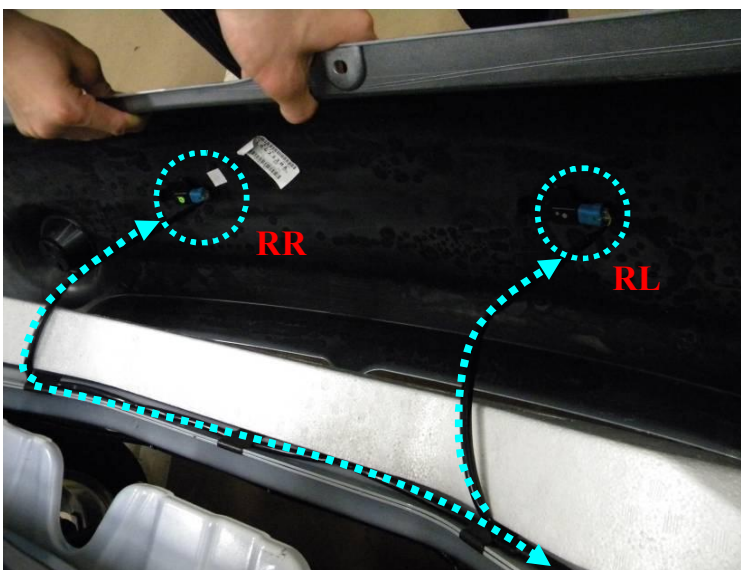
Make sure to clean the afflicted areas with alcohol before applying tape.

23



23. Restore the inside bumper Styrofoam.

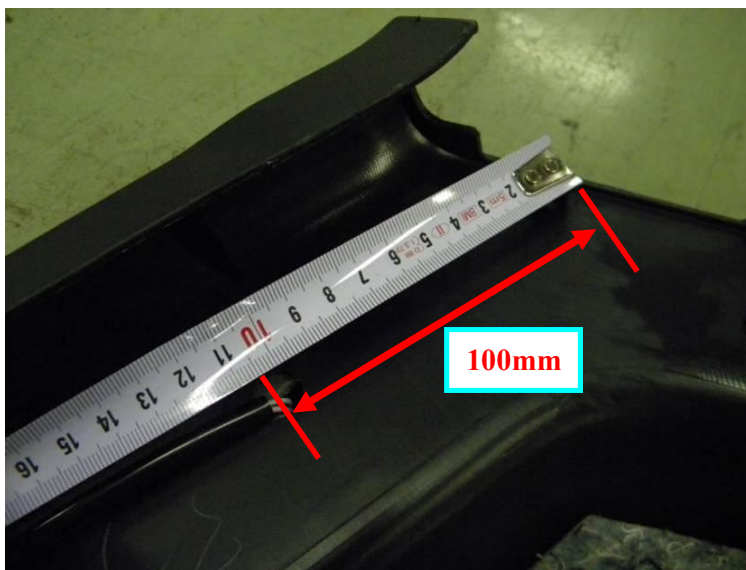
24



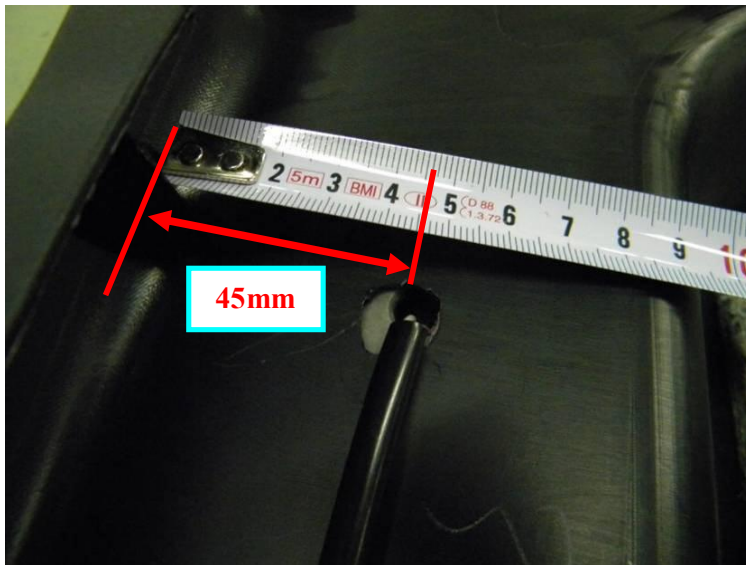
24-1. Connect the sensors in the rear bumper to the harness.

24-2. Restore the rear bumper.

25



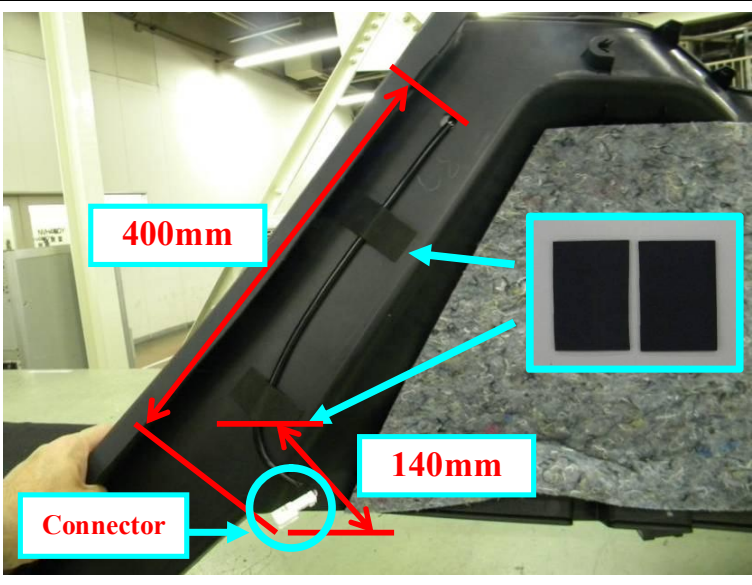
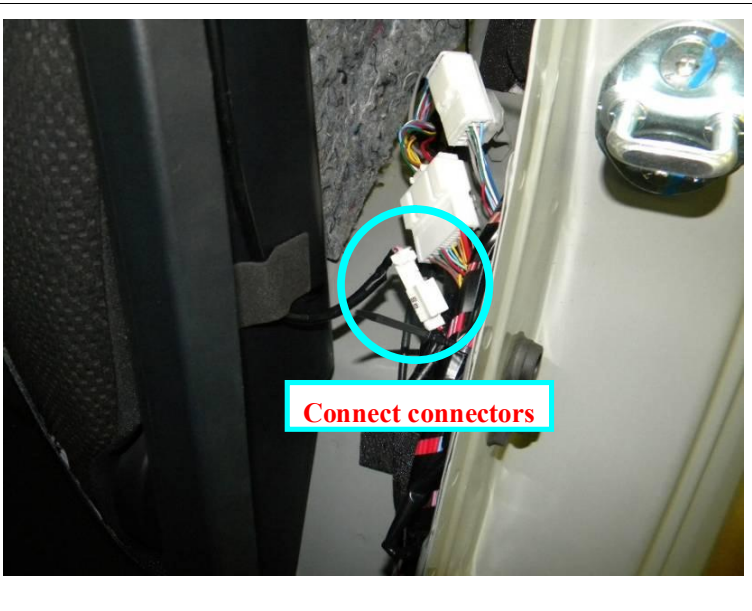
25. Make a $\varnothing 15$ mm hole at the location specified in the picture on the left, lower rear quarter panel that was perviously removed.



26



26. Route the buzzer harness through the $\varnothing 15$ mm hole, and attach the buzzer to the trim, as shown in the figure.

27		<p>27. Tape the harness to the trim as shown in the picture.</p> <p>The amount of harness left loose from the last piece of tape is 140mm.</p>
28		<p>28-1. Connect the 2-pin connectors of the buzzer and of the main harnesses together</p> <p>28-2. Restore the upper trim panel.</p> <p>28-3. Restore the lower quarter trim panel.</p>

Reminder :

1. After installing the sensor system, please confirm that the system functions properly.
2. Please make sure to check if the original electronic devices of the vehicle work properly before re-assembling the removed parts.
3. Restore Cargo side trim (LH), Rear scuff plate (LH), rear seat cushion, rear trim, luggage tray, rear combination lamps, and fasten all bolts and fasteners of rear bumper.
4. Reconnect the (-) cable to the battery.

Product specification

Items	Specification
Rated Voltage	DC 12.0V
Operation Voltage	DC 9.6V~ 16V
Operation Temp	-30°C ~ 80°C
Storage Temp	-40°C ~ 85°C

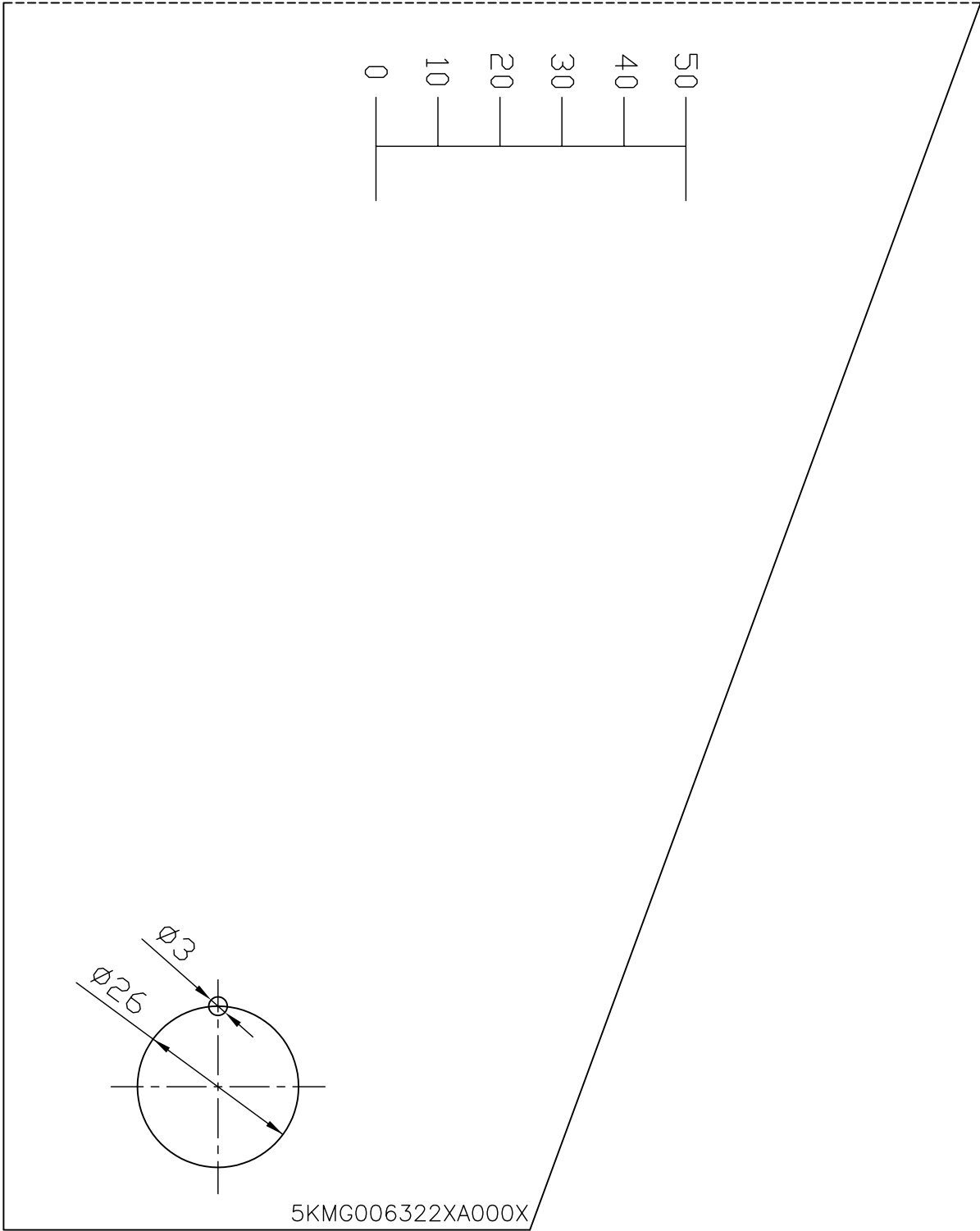
Sensor specification

Items	Specification
Rated Voltage	DC 8V
Operation Voltage	DC 7V~ 9V
Operation Temp	-30°C ~ 80°C
Storage Temp	-40°C ~ 85°C
Activate Frequency	40KHz \pm 2KHz
Sensor Type	Flat type , 18 ϕ , SENSOR ANGLE 0°
Sensor Sensibility	100cm (600*480 ACRYLIC PLATE)

Function Inspection—Troubleshooting

Symptom	Possible Cause	Confirmation Method	Solution
When the gear is shifted to “R”, the alert does not beep.	The buzzer plug has not been inserted.	Confirm whether the buzzer plug is inserted.	Insert the buzzer plug correctly.
	Tail light power wire has not been spliced correctly.	Check if reverse lights are on or that the thick white wire has been spliced.	Splice the thick white wire.
	The fuse to the ECU may have blown.	Check whether the fuse has been blown.	Replace the fuse with a new one.
	ECU is damaged.	Confirm whether the ECU is damaged.	Replace ECU with a new one.
When the gear is shifted to “R”, the alert beeps twice, not once.	One or more of the sensors is not connected properly.	Confirm whether the sensors are properly connected.	Connect the plug of each sensor properly.
	One of the sensors may be damaged.	Confirm whether each sensor functions properly.	Replace any damaged sensor with a new one.
When the gear is shifted to “R”, the alert beeps three times.	Two of the sensors are not connected properly or may be damaged.	Confirm whether the sensors are properly connected and whether each sensor functions properly.	Connect the plug of each sensor properly and replace any damaged sensors with a new one.
When the gear is shifted to “R”, the alert beeps four times.	Three or more of the sensors are not connected properly or may be damaged.	Confirm whether the sensors are properly connected and whether each sensor functions properly.	Connect the plug of each sensor properly and replace any damaged sensors with a new one.
	The sensor’s harness has not been connected to the ECU.	Confirm whether the harness has been connected properly.	Connect the plug of the harness to the ECU.
The gear is in “R” but the warning does not go off although there are objects behind the vehicle.	One of the sensors is damaged.	Confirm whether each sensor functions properly.	Replace any damaged sensor with a new one.
	The objects are outside the range of detection.	Refer to the service manual for the range of detection.	(The warning does not go off when objects are outside the detection area).
	ECU is damaged.	Confirm whether the ECU is damaged.	Replace ECU with a new one.

<p>The gear is in "R" and the warning goes off for a while although there is no object behind the vehicle.</p>	<p>The sensor surface is covered with foreign materials such as mud, water drops, etc.</p>	<p>Confirm whether the sensor surface is covered with foreign materials.</p>	<p>Clean up the sensor surface and see if it functions normally.</p>
	<p>One of the sensors is damaged.</p>	<p>Confirm whether each sensor functions properly.</p>	<p>Replace any damaged sensor with a new one.</p>
<p>The gear is in "R", and the warning goes off intermittently although there is no object behind the vehicle.</p>	<p>The sensors are not installed in the proper position.</p>	<p>Confirm whether the sensors are installed in the proper position.</p>	<p>Reinstall the sensors in the proper position.</p>
	<p>The sensors have detected harsh roads.</p>	<p>Confirm the road condition.</p>	<p>(Misdetection is possible when the system detects harsh roads or small objects on the road.)</p>
	<p>The vehicles posture is weighted heavily to one side.</p>	<p>Confirm the vehicles posture.</p>	<p>Misdetection may occur if the vehicle is heavily weighted in the rear or at the cusp of a steep incline. (Refer to service manual for figure.)</p>



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