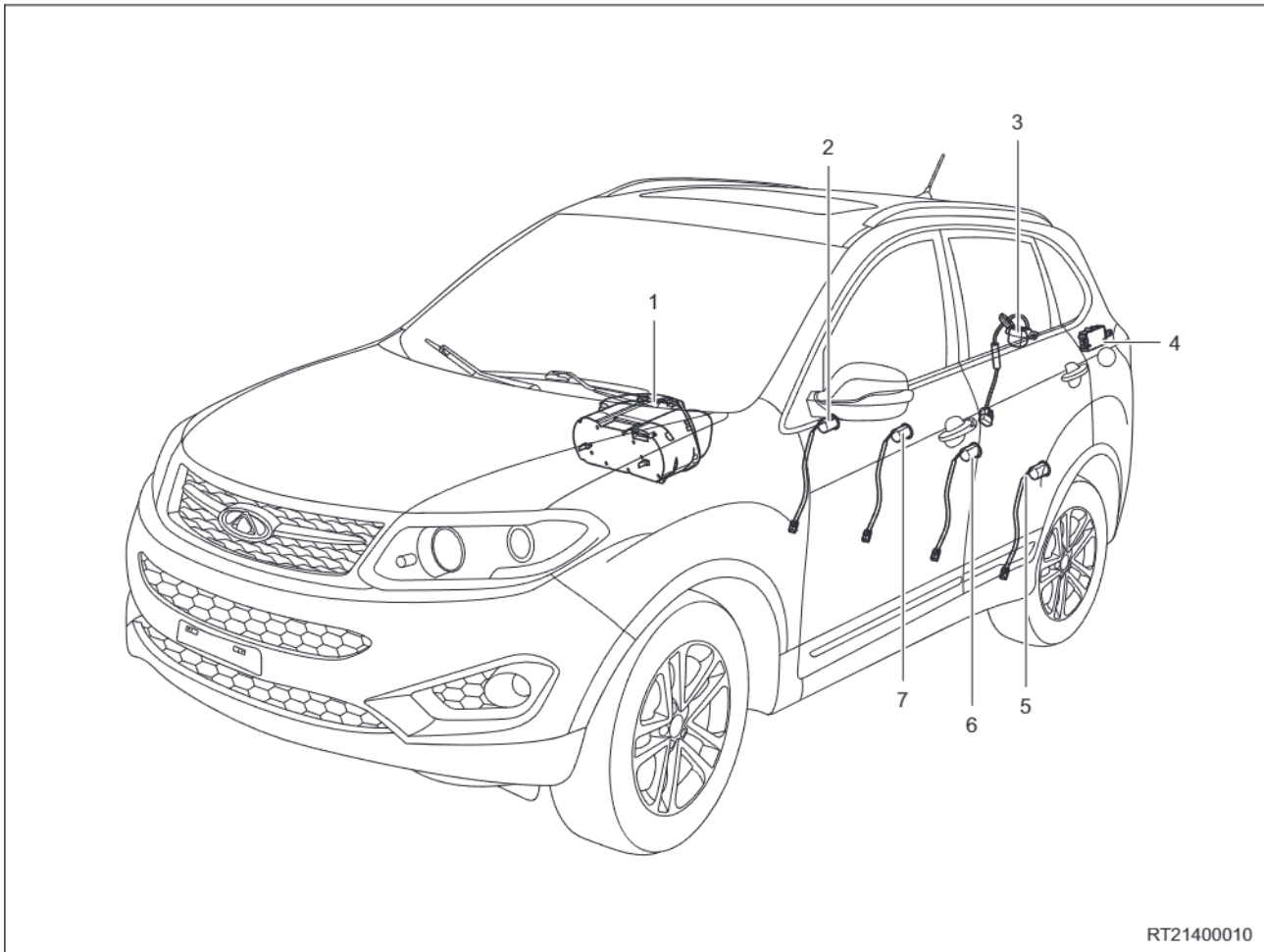

REVERSING RADAR SYSTEM

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GENERAL INFORMATION

Description



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1 - Instrument Cluster (Built-in Buzzer)	2 - Right Reversing Radar Sensor
3 - Rear View Monitor Camera	4 - Reversing Radar Control Module Assembly
5 - Left Reversing Radar Sensor	6 - Center Left Reversing Radar Sensor
7 - Center Right Reversing Radar Sensor	

Operation

Reversing radar system is an auxiliary system intended to assist driver when reversing, consists of reversing radar sensor (probe), reversing radar control module assembly and alarm device (instrument cluster built-in buzzer). Reversing radar system is activated when shift lever is shifted to reverse range. When the reversing radar sensor detects obstacles behind, the instrument cluster built-in buzzer will sound. This can help driver to eliminate the blind corner and blurred vision, thus improving the driving safety when reversing.

Reversing Radar Normal Alarm Display

Reversing radar system consists of four reversing radar sensors and one reversing radar control module assembly.

It is activated when the shift lever is shifted to R and reversing at the speed below 5 km/h with ignition switch ON. The corresponding measured message will be displayed on multi-information display and alarm with buzzer in instrument cluster.

The response way of reversing radar system is buzzer response. The table below shows the correspondence between buzzer response frequency and actual obstacle distance:

Alarm Type	1st Section	2nd Section	3rd Section	4th Section	5th Section
Displayed Area	Safe Area	Pre-warning Area	Amble Area	Park Area	Park Area
Alarm Distance (cm)	> 150	95 - 150	65 - 90	35 - 60	≤ 35
Buzzer Sound Frequency	No Sound (OFF)	1Hz (ON 500ms/OFF 500ms)	2Hz (ON 250ms/OFF 250ms)	4Hz (ON 125ms/OFF 125ms)	Continuous Sound

Specification

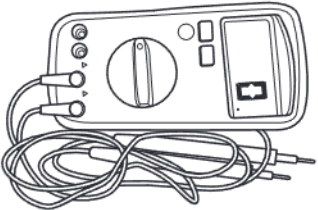
Torque Specification

Description	Torque (N·m)
Fixing Bolt Between Reversing Radar Control Module Assembly and Body	5 ± 1

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Tool

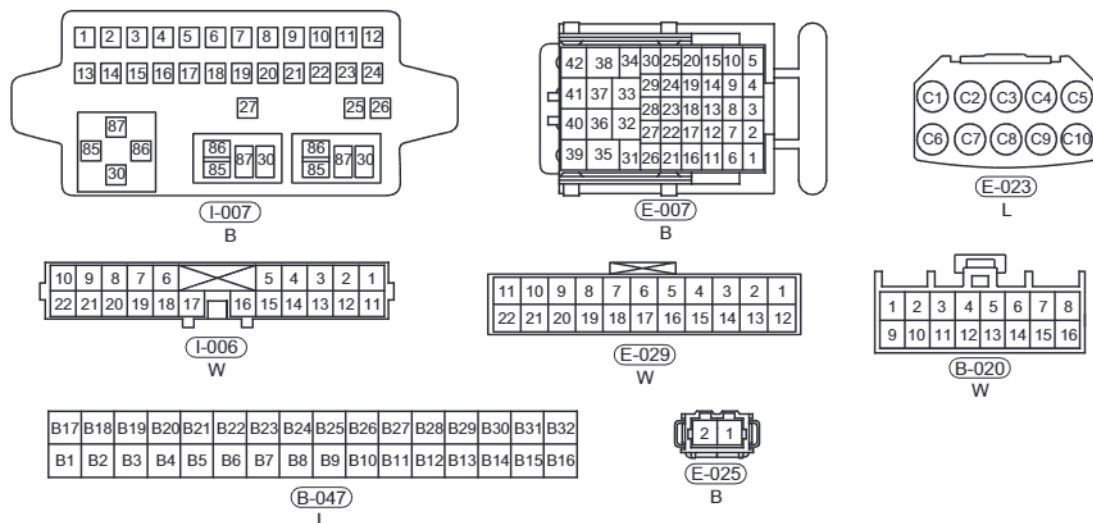
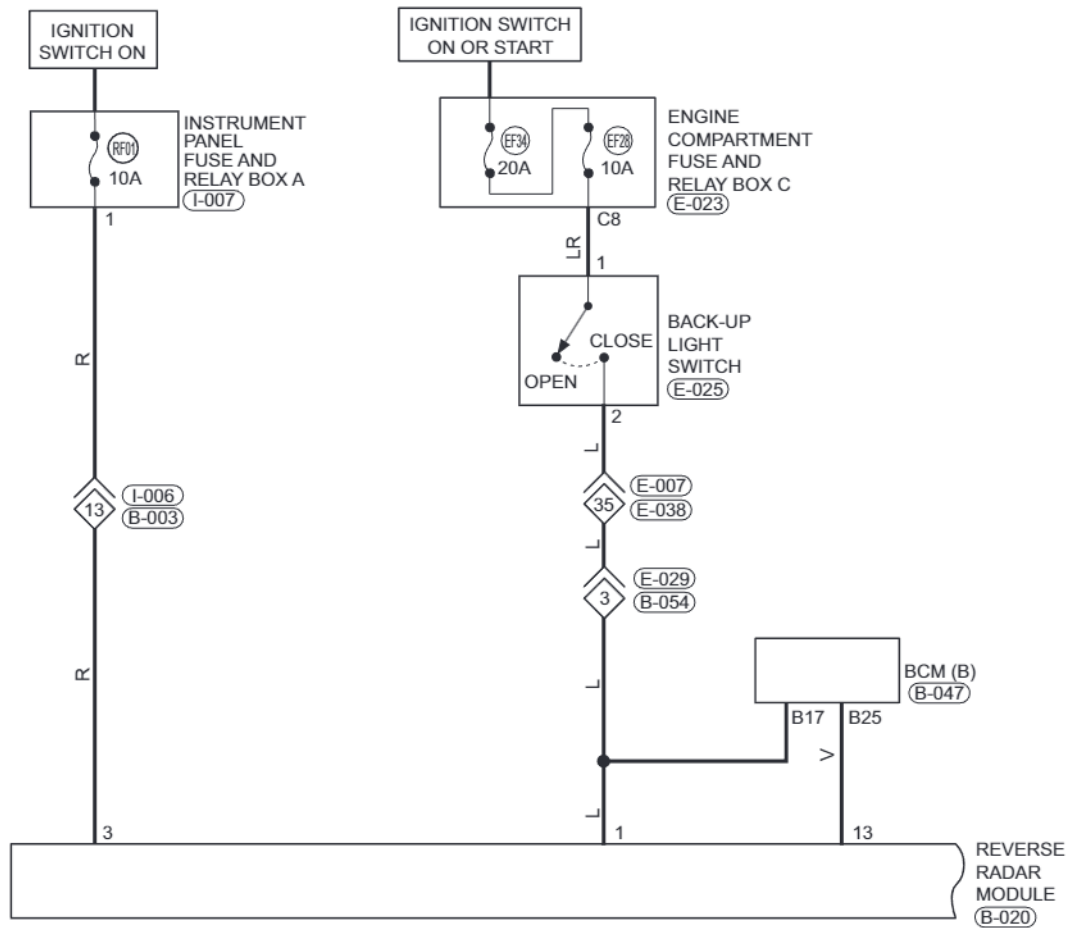
General Tool

Digital Multimeter	 RCH0000002
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Circuit Diagram

Reversing Radar System (Page 1 of 3)

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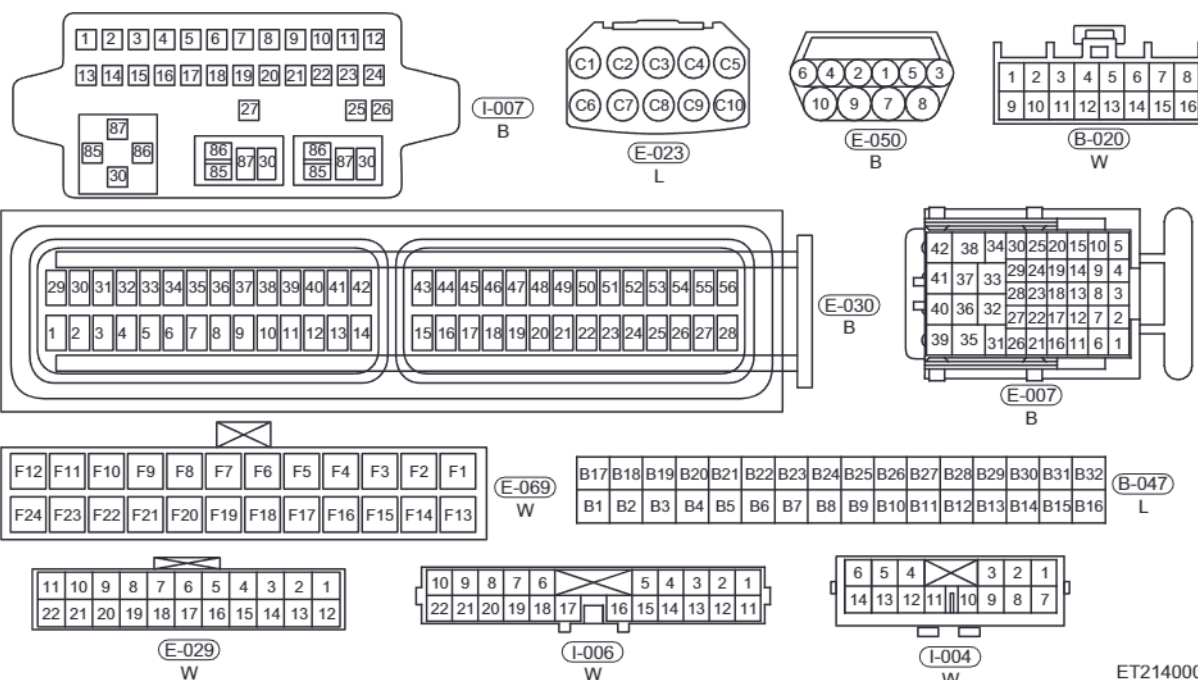
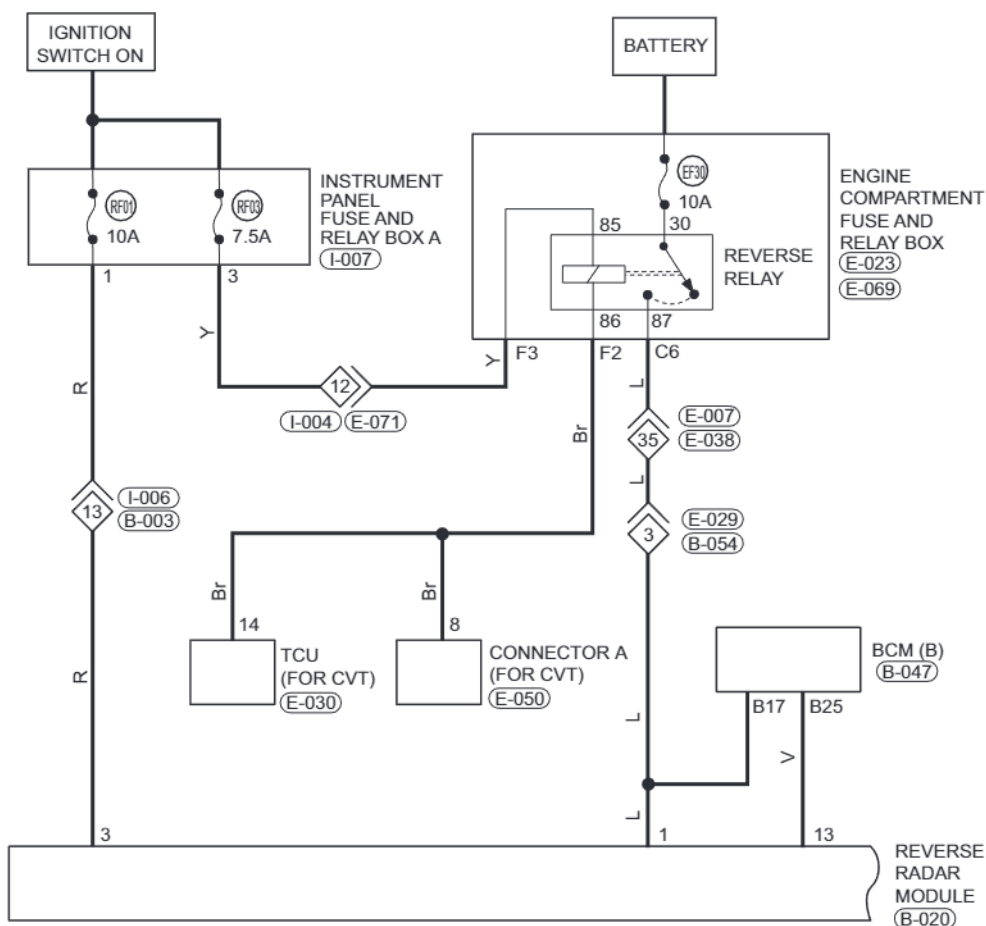


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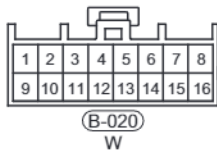
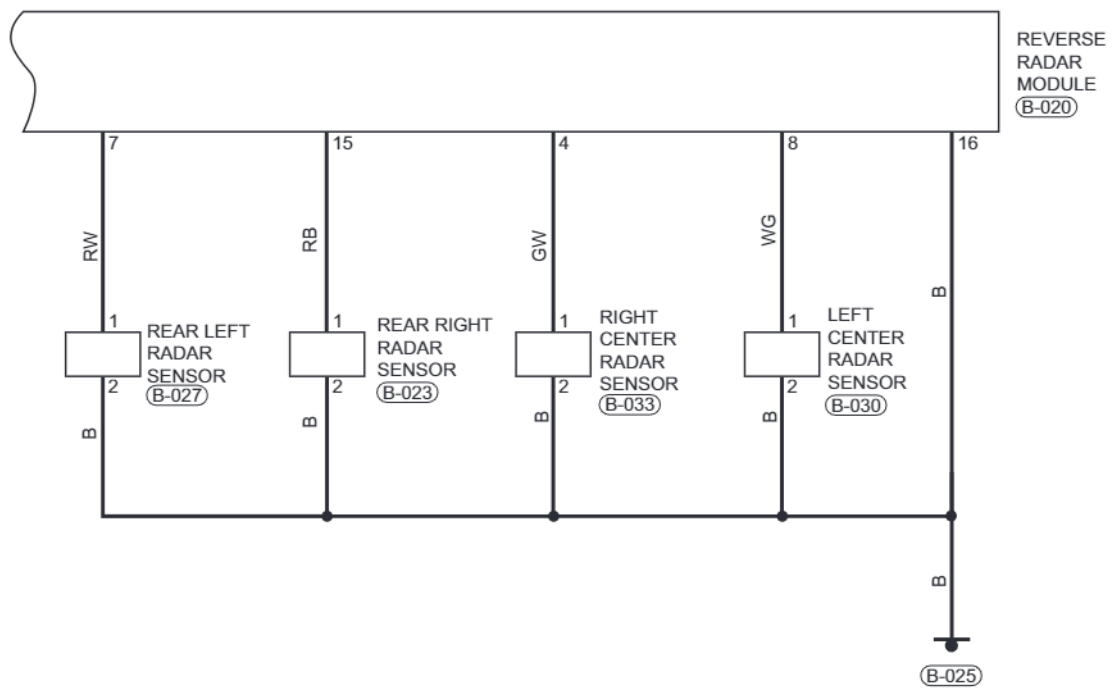
Reversing Radar System (Page 2 of 3)

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Reversing Radar System (Page 3 of 3)



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Reversing Radar Control Module Assembly Terminal List

Pin No.	Terminal Definition	Pin No.	Terminal Definition
1	Reversing Signal	9	-
2	-	10	-
3	Ignition Signal	11	-
4	Center Right Reversing Radar Sensor Signal	12	-
5	-	13	Data Signal (to Body Control Module (BCM))
6	-	14	-
7	Left Reversing Radar Sensor Signal	15	Right Reversing Radar Sensor Signal
8	Center Left Reversing Radar Sensor Signal	16	Ground

DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust as necessary.

Symptom	Suspected Area	See page
Reversing radar system does not function (buzzer in instrument cluster does not sound)	Back-up light switch Assembly	35-88
	Reversing radar sensor	-
	Camera	-
	Reversing radar control module assembly	-
	Instrument cluster	38-42
	Wire harness and connector	-

Self-checking Function

Reversing radar system has malfunction self-checking function, and the function instructions are as follows: If reversing radar sensor wire harness and connector are damaged or there is a malfunction in the reversing radar sensor body, the instrument cluster will alarm after turning ignition switch ON and shifting the shift lever to R.

Specific alarms are as follows:

1. When system is normal, the buzzer does not sound, and reversing radar system enters normal operation mode.
2. When there are malfunctions in one or more sensors, relevant reversing radar sensor malfunction will be displayed on multi-information display, other sensors can also enter normal operation mode.

ON-VEHICLE SERVICE

Reversing Radar Sensor

Removal

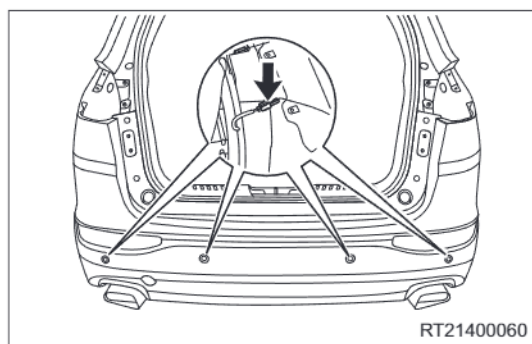
CAUTION

- Be sure to wear necessary safety equipment to prevent accidents when removing the reversing radar sensor.
- Operate carefully to avoid damaging the reversing radar sensor when removing the reversing radar sensor.

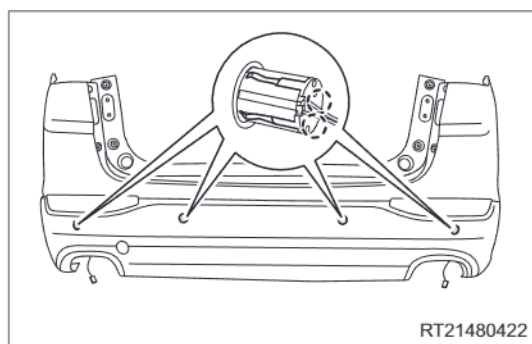
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear bumper assembly ([See page 48-30](#)).

HINT:

The reversing radar sensor connector (arrow) has been disconnected when removing the rear bumper assembly.



4. Remove the reversing radar sensor.
 - a. Press the claws on reversing radar sensor.
 - b. Remove the reversing radar sensor from the rear bumper assembly.

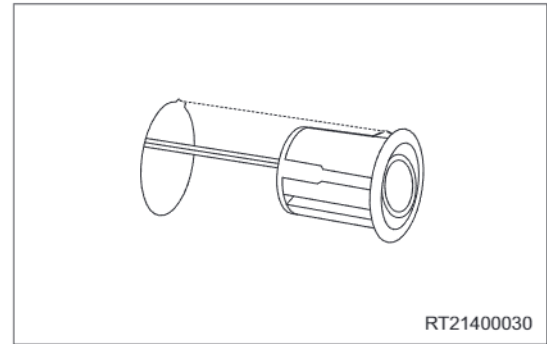


Installation

Installation is in the reverse order of removal.

HINT:

When installing the reversing radar sensor, align the boss at the end of reversing radar sensor with the groove on rear bumper assembly, and then firmly install the reversing radar sensor as shown in the illustration.



CAUTION

- Install connector in place when installing the reversing radar sensor.
- Check reversing radar system for proper operation after installing the reversing radar sensor.

Rear View Monitor Camera

Removal

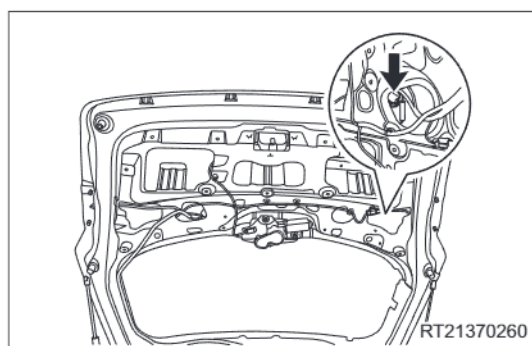
CAUTION

- Be sure to wear necessary safety equipment to prevent accidents when removing the rear view monitor camera.
- Appropriate force should be applied when removing the rear view monitor camera. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the Back Door Protector Assembly (See page 47-47).

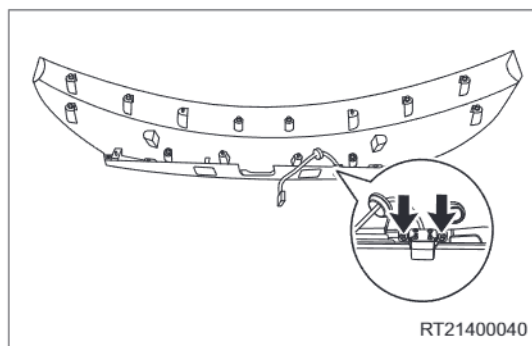
HINT:

The rear view monitor camera connector (arrow) has been disconnected when removing the luggage compartment upper trim assembly.



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4. Remove the rear view monitor camera.
 - a. Remove 2 fixing screws (arrow) from the rear view monitor camera, and remove the rear view monitor camera.
(Tightening torque: $6 \pm 0.1 \text{ N}\cdot\text{m}$)



Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing screws to specified torque when installing the rear view monitor camera.
- Install connector in place when installing the rear view monitor camera.
- Check reversing radar system for proper operation after installing the rear view monitor camera.

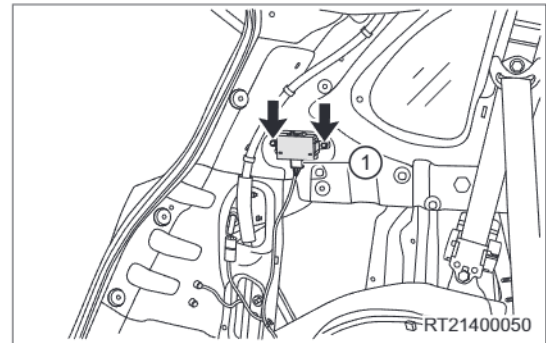
Reversing Radar Control Module Assembly

Removal

CAUTION

- Be sure to wear necessary safety equipment to prevent accidents when removing the reversing radar control module assembly.
- Appropriate force should be applied when removing the reversing radar control module assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the C-pillar lower protector assembly ([See page 49-23](#)).
4. Remove the C-pillar upper protector assembly ([See page 49-26](#)).
5. Remove the reversing radar control module assembly.
 - a. Disconnect the reversing radar control module assembly connector (1).
 - b. Remove 2 fixing bolts (arrow) between reversing radar control module assembly and body, and remove the reversing radar control module assembly.
(Tightening torque: $5 \pm 1 \text{ N}\cdot\text{m}$)



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Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing bolts to specified torque when installing the reversing radar control module assembly.
- Install connector in place when installing the reversing radar control module assembly.
- Check reversing radar system for proper operation after installing the reversing radar control module assembly.

