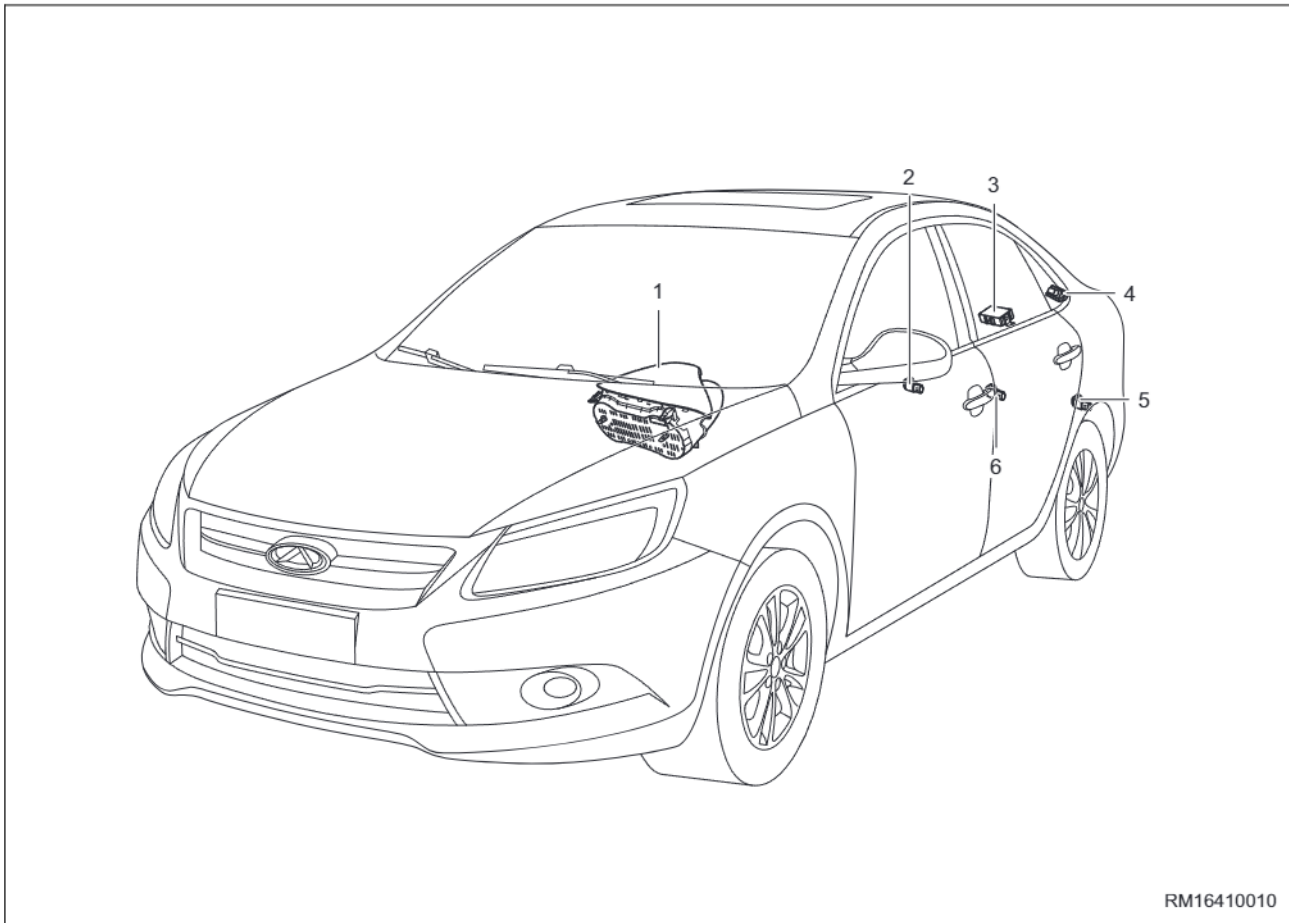

REVERSING RADAR SYSTEM

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GENERAL INFORMATION

Description



RM16410010

41

1 - Instrument Cluster (Built-in Buzzer)	2 - Right Reversing Radar Sensor
3 - Reversing Radar Control Module Assembly	4 - Camera Assembly
5 - Left Reversing Radar Sensor	6 - Center Left 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 reversing radar sensor detects obstacles behind, the instrument cluster built-in buzzer will sound. This can help driver to eliminate blind corner and blurred vision, thus improving the driving safety when reversing.

Reversing Radar Normal Alarm Display

Reversing radar system consists of three 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	40 - 60	≤ 35
Buzzer Sound Frequency	No Sound (OFF)	1 Hz (ON 500 ms/OFF 500 ms)	2 Hz (ON 250 ms/OFF 250 ms)	4 Hz (ON 125 ms/OFF 125 ms)	Continuous Sound

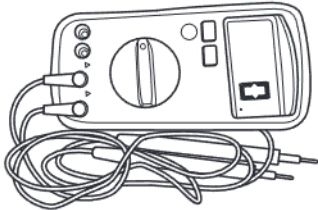
Specification

Torque Specification

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

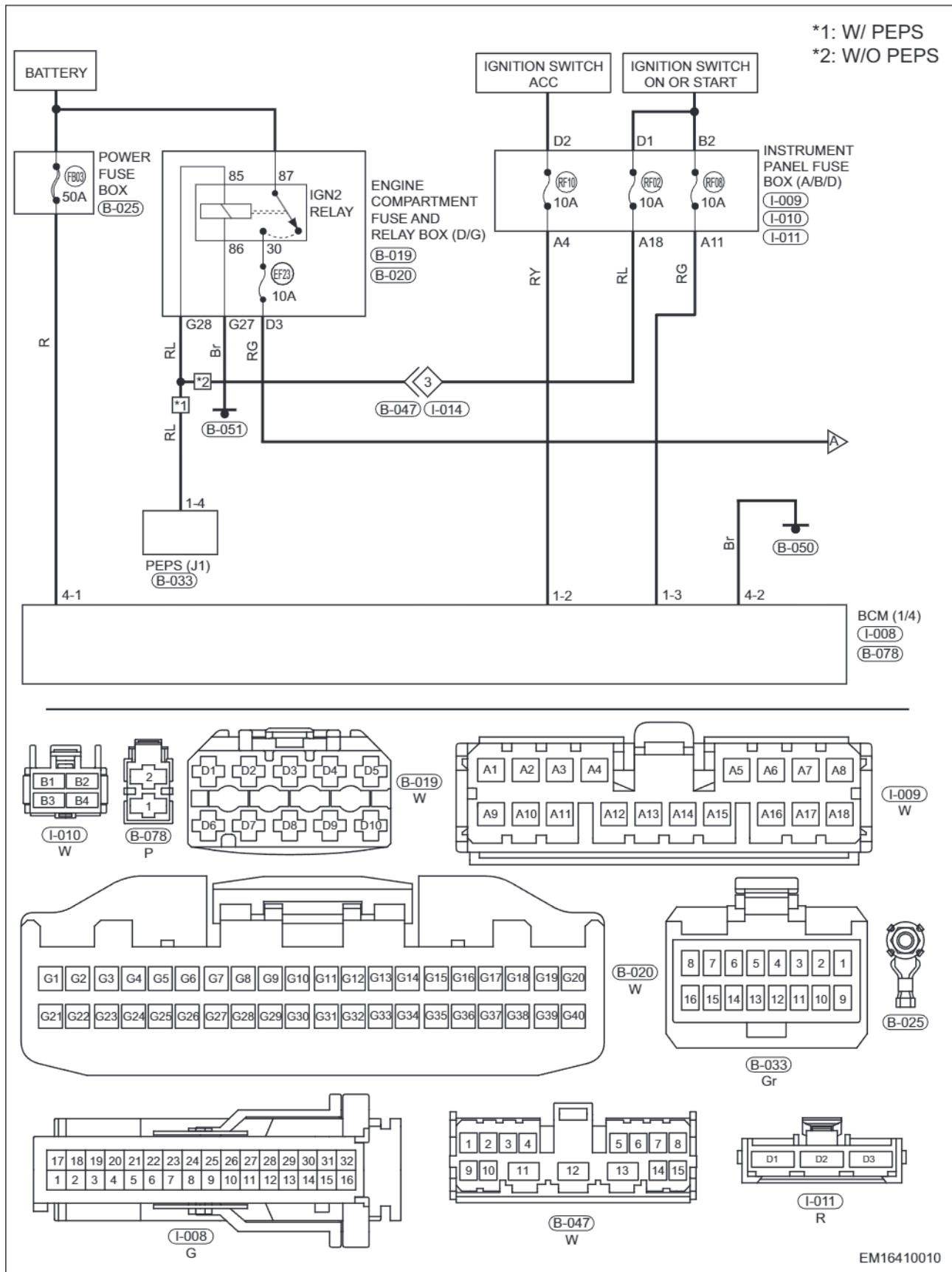
41 Tool

General Tool

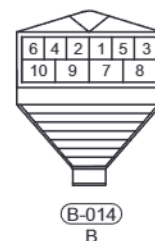
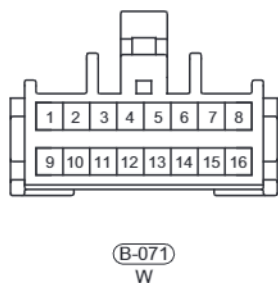
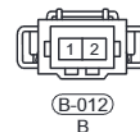
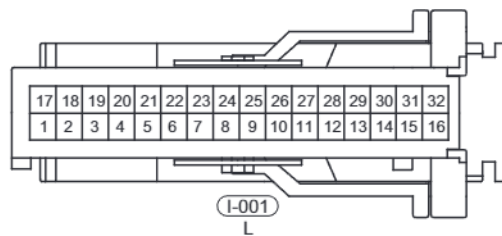
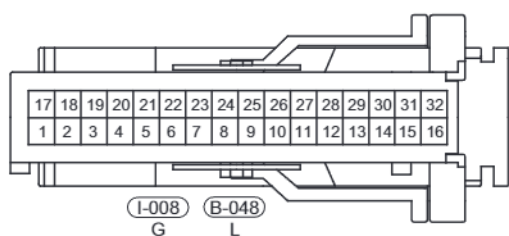
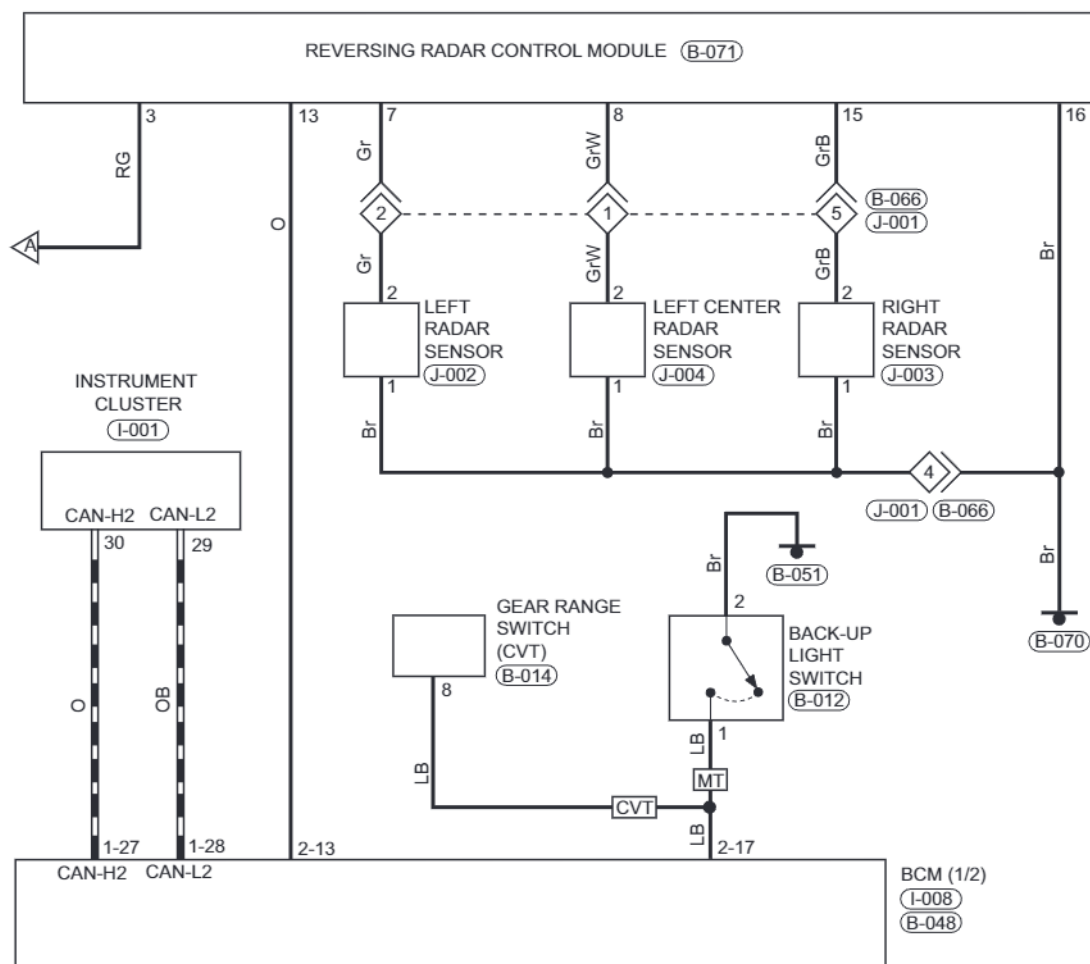
Digital Multimeter	 RCH0000002
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Circuit Diagram

Reversing Radar System (Page 1 of 2)



Reversing Radar System (Page 2 of 2)



EM16410020

Reversing Radar Control Module Assembly Terminal List

Pin No.	Terminal Definition	Pin No.	Terminal Definition
1	-	9	-
2	-	10	-
3	Battery Power Supply	11	-
4	-	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 symptoms table below to help determine cause of problem. Check each suspected area in sequence. Repair or adjust faulty components, or replace 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	36-97
	Reversing radar sensor	41-9
	Camera assembly	41-11
	Reversing radar control module assembly	41-12
	Instrument cluster	39-77
	Wire harness and connector	-

ON-VEHICLE SERVICE

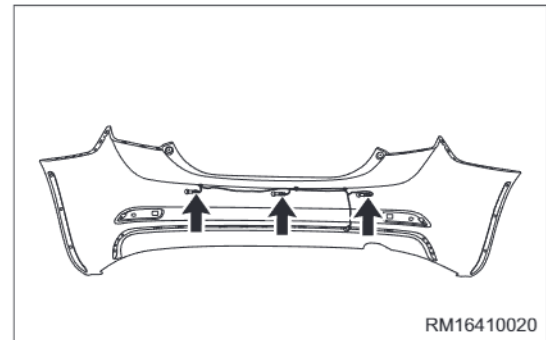
Reversing Radar Sensor

Removal

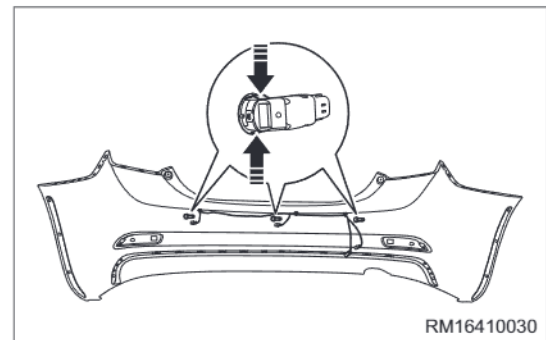
CAUTION

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

1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear bumper assembly ([See page 49-23](#)).
4. Remove the reversing radar sensor.
 - a. Disconnect the reversing radar sensor connectors (arrow).



- b. Press the clamping portion on reversing radar sensor in the direction of arrow as shown in the illustration.
- c. Remove the reversing radar sensor from rear bumper assembly.

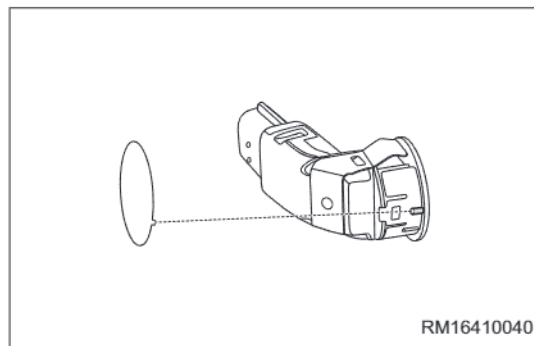


Installation

Installation is in the reverse order of removal.

HINT:

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



CAUTION

- Install connectors in place when installing reversing radar sensors.
- Check reversing radar system for proper operation, after installing reversing radar sensors.

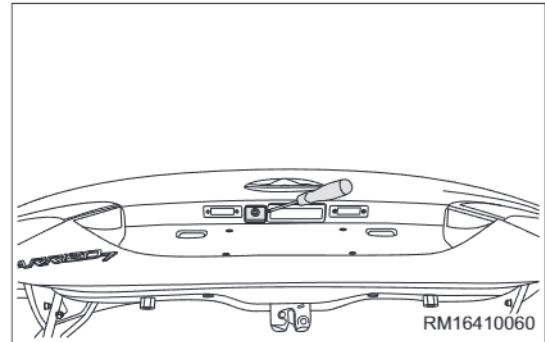
Camera Assembly

Removal

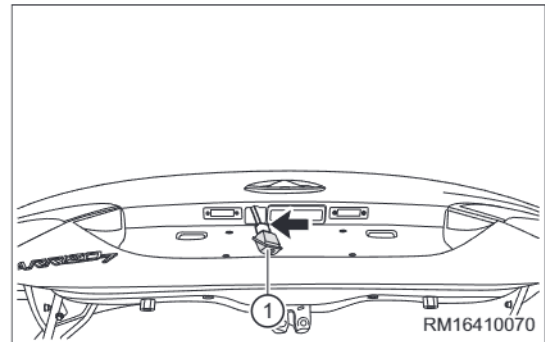
CAUTION

- Be sure to wear necessary safety equipment to prevent accidents, when removing camera assembly.
- Appropriate force should be applied when removing camera assembly. Be careful not to operate roughly.

1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the camera assembly.
 - a. Using a screwdriver wrapped with protective tape, pry up the clips on camera assembly.



- b. Disconnect the camera assembly connector (arrow), and remove the camera assembly (1).



Installation

Installation is in the reverse order of removal.

CAUTION

- Install connector in place when installing camera assembly.
- Check reversing radar system for proper operation, after installing camera assembly.

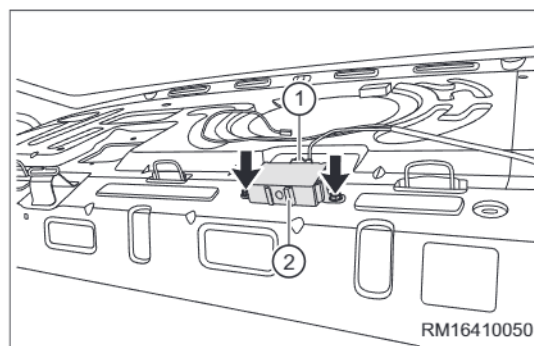
Reversing Radar Control Module Assembly

Removal

CAUTION

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

1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the tonneau cover assembly (See page 50-37).
4. Removing 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 (2).
(Tightening torque: $5 \pm 1 \text{ N}\cdot\text{m}$)



41 Installation

Installation is in the reverse order of removal.

CAUTION

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

