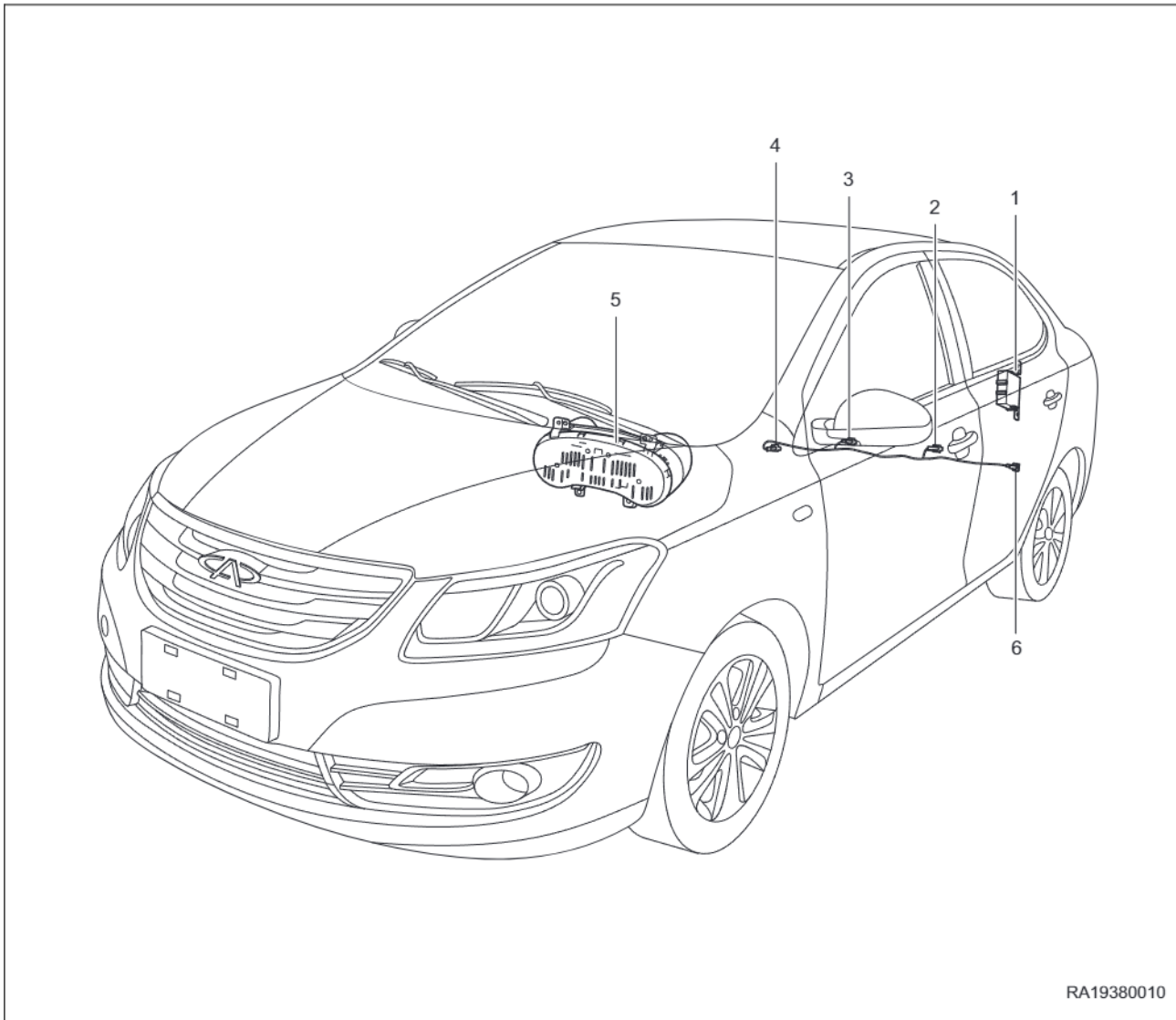

REVERSING RADAR SYSTEM

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GENERAL INFORMATION

Description



RA19380010

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

Operation

Reversing radar system, an auxiliary system used when driver is 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 the shift lever is shifted to reverse range. When the reversing radar sensor senses obstacles behind, the instrument cluster built-in buzzer will sound. This can help the 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 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.

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
Sound Frequency of Buzzer	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

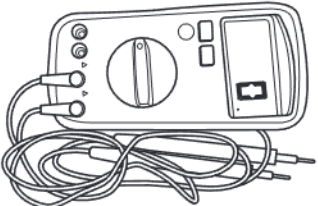
Torque Specification

Description	Torque (N·m)
Fixing Bolt Between Reversing Radar Control Module Assembly and Body	7 ± 1.5

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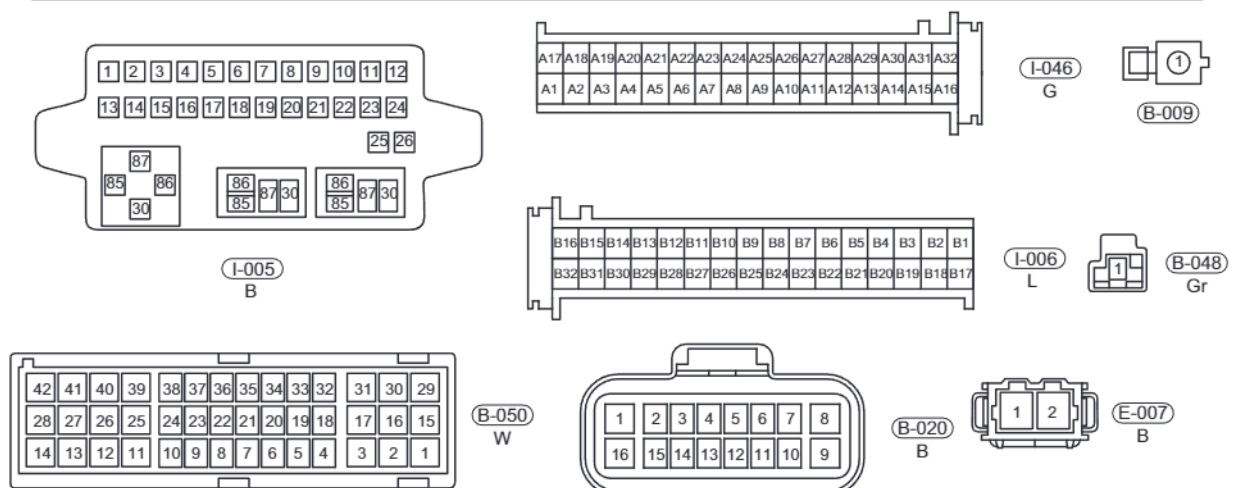
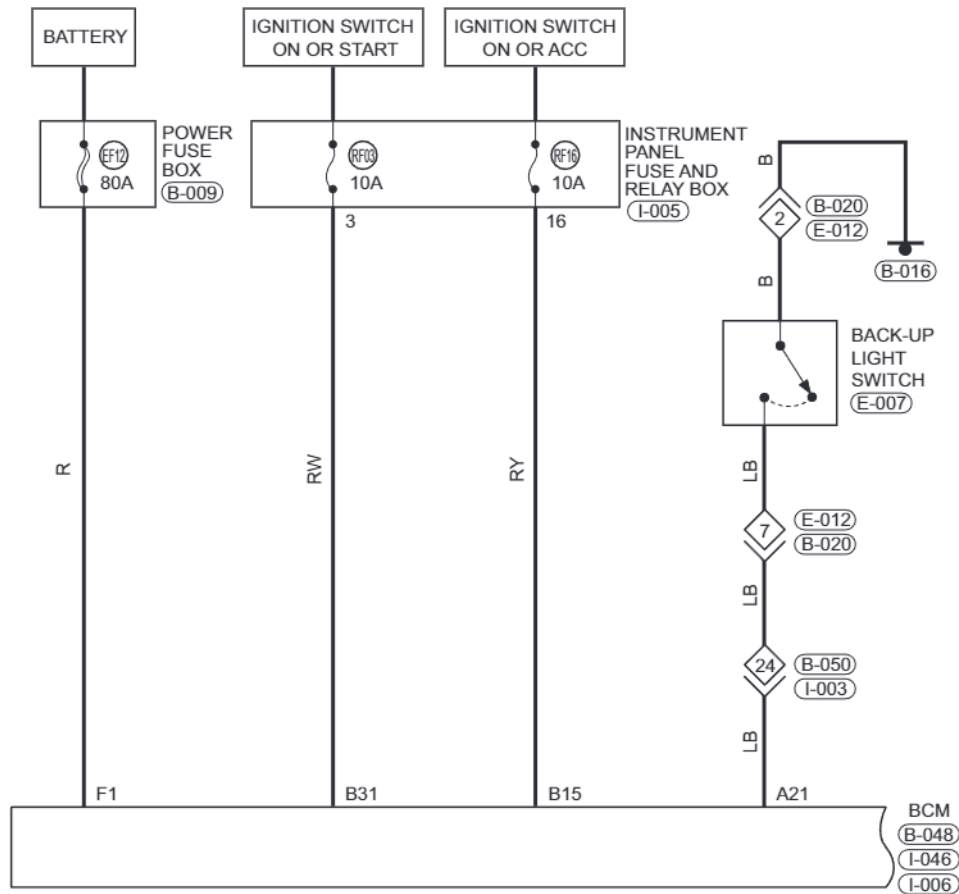
Tool

General Tool

Digital Multimeter	 RCH0000002
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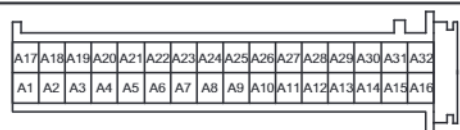
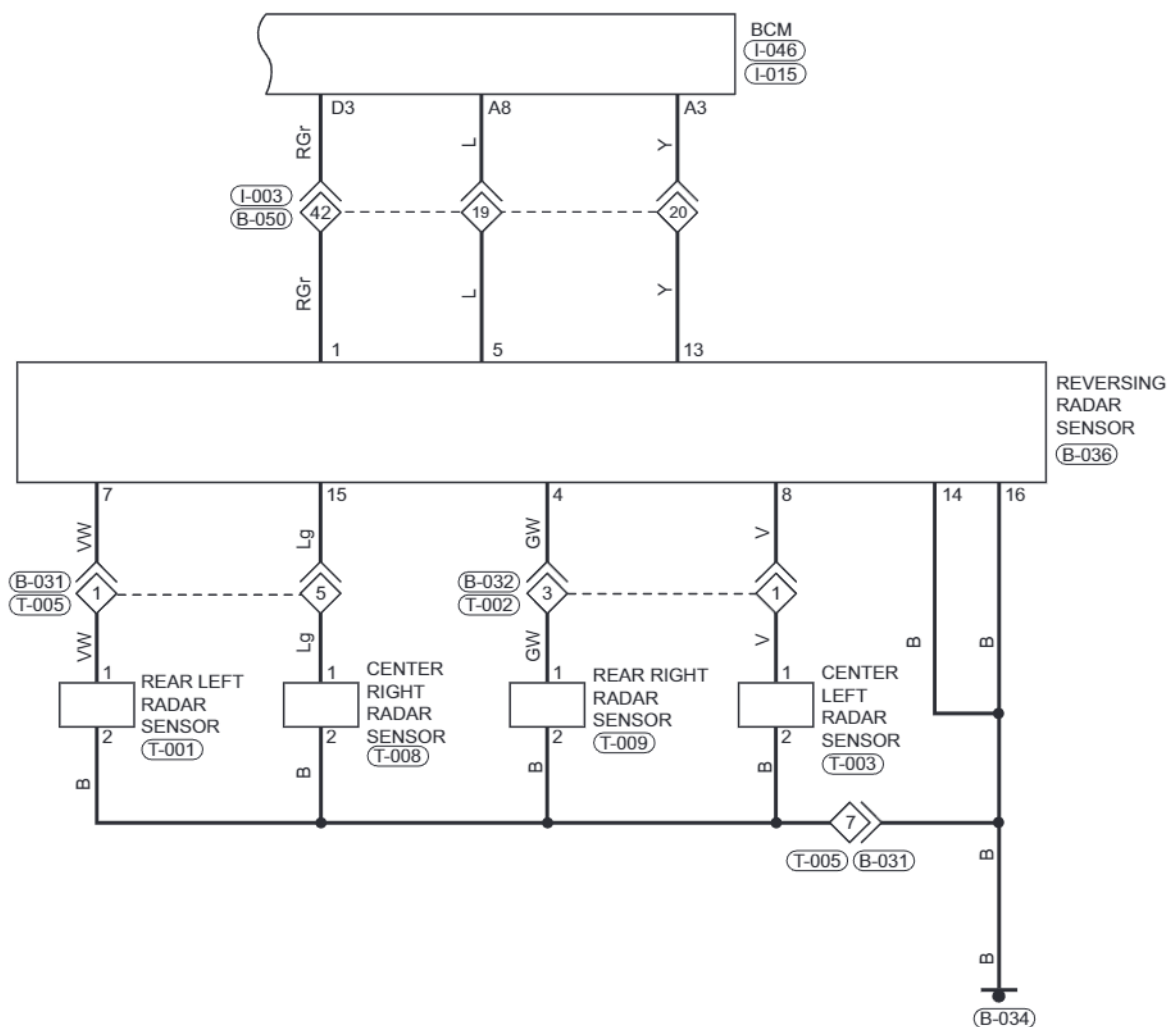
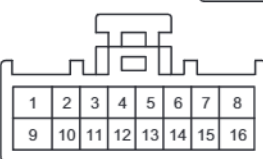
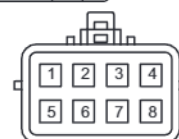
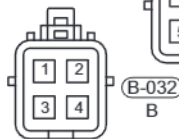
Circuit Diagram

Reversing Radar System (Page 1 of 2)



EA19380010

Reversing Radar System (Page 2 of 2)

I-046
GB-050
WI-015
WB-036
WT-001
LT-008
LT-009
LT-003
LB-031
BB-032
B

EA19380020

Reversing Radar Control Module Assembly Terminal List

Pin No.	Terminal Definition	Pin No.	Terminal Definition
1	Power Supply (Reversing Signal)	9	-
2	-	10	-
3	-	11	-
4	Center Right Reversing Radar Sensor Signal	12	-
5	Clock Signal (to Body Control Module (BCM))	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 the problem. Check each suspected area in sequence. Repair or replace the faulty components, or adjust them as necessary.

Symptom	Suspected Area	See page
Reversing radar system does not function (buzzer in instrument cluster does not sound)	Back-up light switch	33-78
	Reversing radar sensor	-
	Reversing radar control module assembly	38-11
	Instrument cluster	36-34
	Wire harness and connector	-

Self-checking Function

Reversing radar system has malfunction self-checking function, and the function instructions are as follows:

If the reversing radar sensor wire harness and connector are damaged or there is a malfunction in the reversing radar sensor, the instrument cluster will alarm after turning the ignition switch to ON and shifting the shift lever to R.

The specific warnings are as follows:

1. When the system is normal, the buzzer does not sound, and the 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 LCD display, other sensors can also enter normal operation mode.

ON-VEHICLE SERVICE

Reversing Radar Sensor

Removal

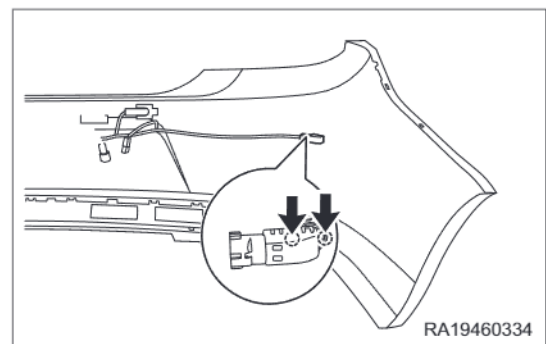
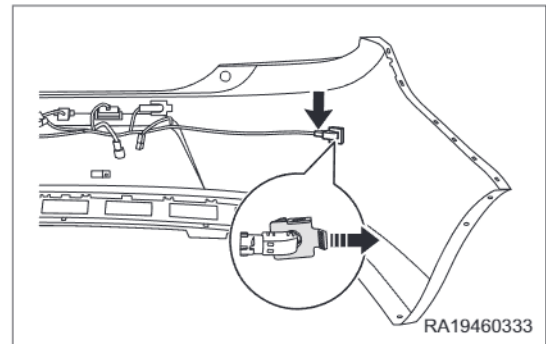
HINT:

- Use the same procedures for the right, center left, center right and left reversing radar sensor.
- The procedures listed below are for the left reversing radar sensor.

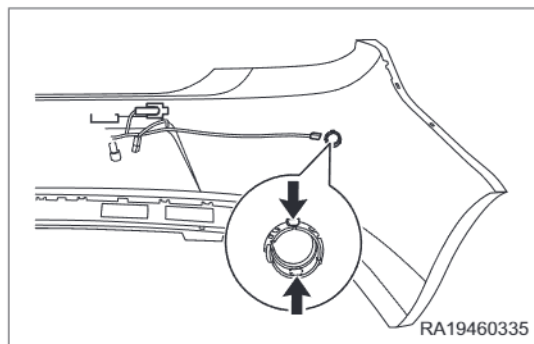
CAUTION

- Be sure to wear the necessary safety equipment to prevent accidents when removing the reversing radar sensor.
- Operate carefully to avoid damaging the reversing radar sensors 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 46-22](#)).
4. Remove the reversing radar sensor.
 - a. Disconnect the reversing radar sensor wire harness connector (arrow).
 - b. Remove the reversing radar sensor clip in the direction of arrow as shown in the illustration.
 - c. Using a screwdriver wrapped with protective tape, disengage the claws (arrow) on reversing radar sensor.



- d. Remove the reversing radar sensor.
- e. Press the clip in the direction of arrow and remove the reversing radar sensor housing.

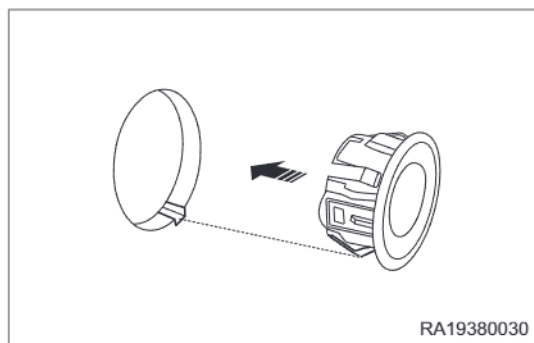


Installation

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 and the groove on the rear bumper assembly, and then firmly install the reversing radar sensor as shown in the illustration.



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CAUTION

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

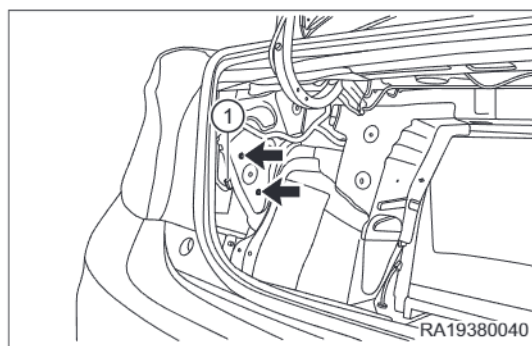
Reversing Radar Control Module Assembly

Removal

CAUTION

- Be sure to wear the 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, and operate carefully.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the luggage compartment trim cover assembly ([See page 47-33](#)).
4. 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.
(Tightening torque: $7 \pm 1.5 \text{ N}\cdot\text{m}$)



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- c. Remove the reversing radar control module assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

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

