

# SECTION **SRC**

## SRS AIRBAG CONTROL SYSTEM

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# SRS AIR BAG SYSTEM

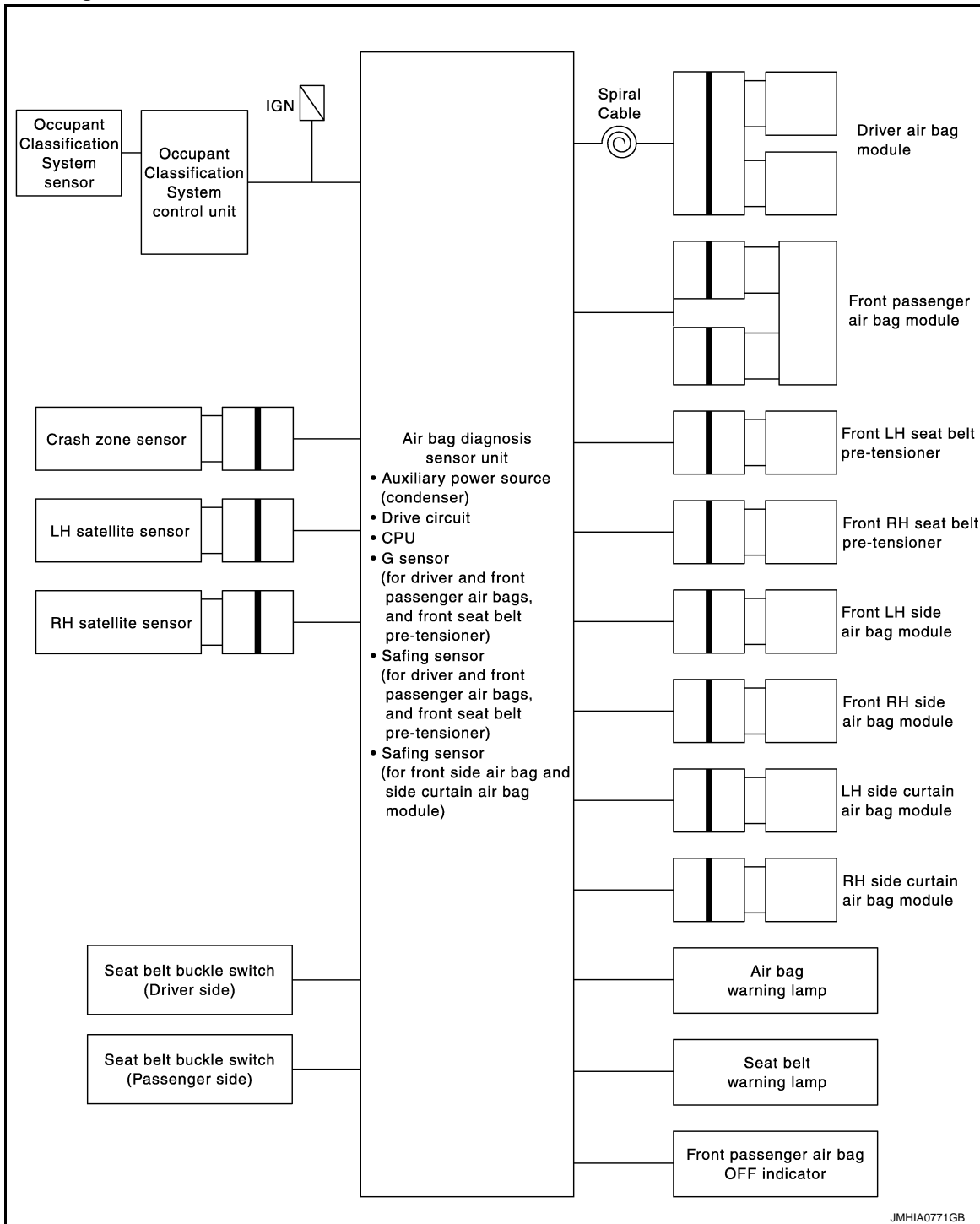
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## SYSTEM DESCRIPTION

### SRS AIR BAG SYSTEM

#### System Diagram

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#### System Description

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This SRS Air Bag System has the following functions.

- Detects a collision and supplies the energy for deploying air bag and seat belt pre-tensioner.
- Detects electrical malfunction in SRS Air Bag System and Seat Belt Pre-tensioner System, records malfunction code, and blinking air bag warning lamp.

# SRS AIR BAG SYSTEM

## < SYSTEM DESCRIPTION >

- Detects and records the deployment of air bag and seat belt pre-tensioner, and turns ON air bag warning lamp. A
- Indicates malfunctioning portion with blinking times of air bag warning lamp in diagnosis mode.
- Indicates the malfunction record by CONSULT.
- Suppress the deployment of front passenger air bag when front passenger seat is empty or is occupied by a child or a child-seat. B
- When passenger seat is occupied by a child or a child seat, turns ON front passenger air bag OFF indicator.
- When judges that passenger seat is occupied by a adult or a child and passenger seat belt is not fasten, turns ON seat belt warning lamp. C

## COLLISION MODE

- The operation of supplemental restraint system is different depending on the collision modes applications. For example, the driver air bag module, front passenger air bag module and front seat belt pre-tensioner are activated in a frontal collision but not in a side collision. D
- SRS configurations that are activated for some collision modes are as per the following. E

SRS configuration	Frontal collision	Left side collision	Right side collision
Driver air bag module	×	—	—
Front passenger air bag module	×	—	—
Front LH seat belt pre-tensioner	×	—	—
Front RH seat belt pre-tensioner	×	—	—
Front LH side air bag module	—	×	—
Front RH side air bag module	—	—	×
LH side curtain air bag module	—	×	—
RH side curtain air bag module	—	—	×

**SRC**

- ×: Apply
- : Not apply

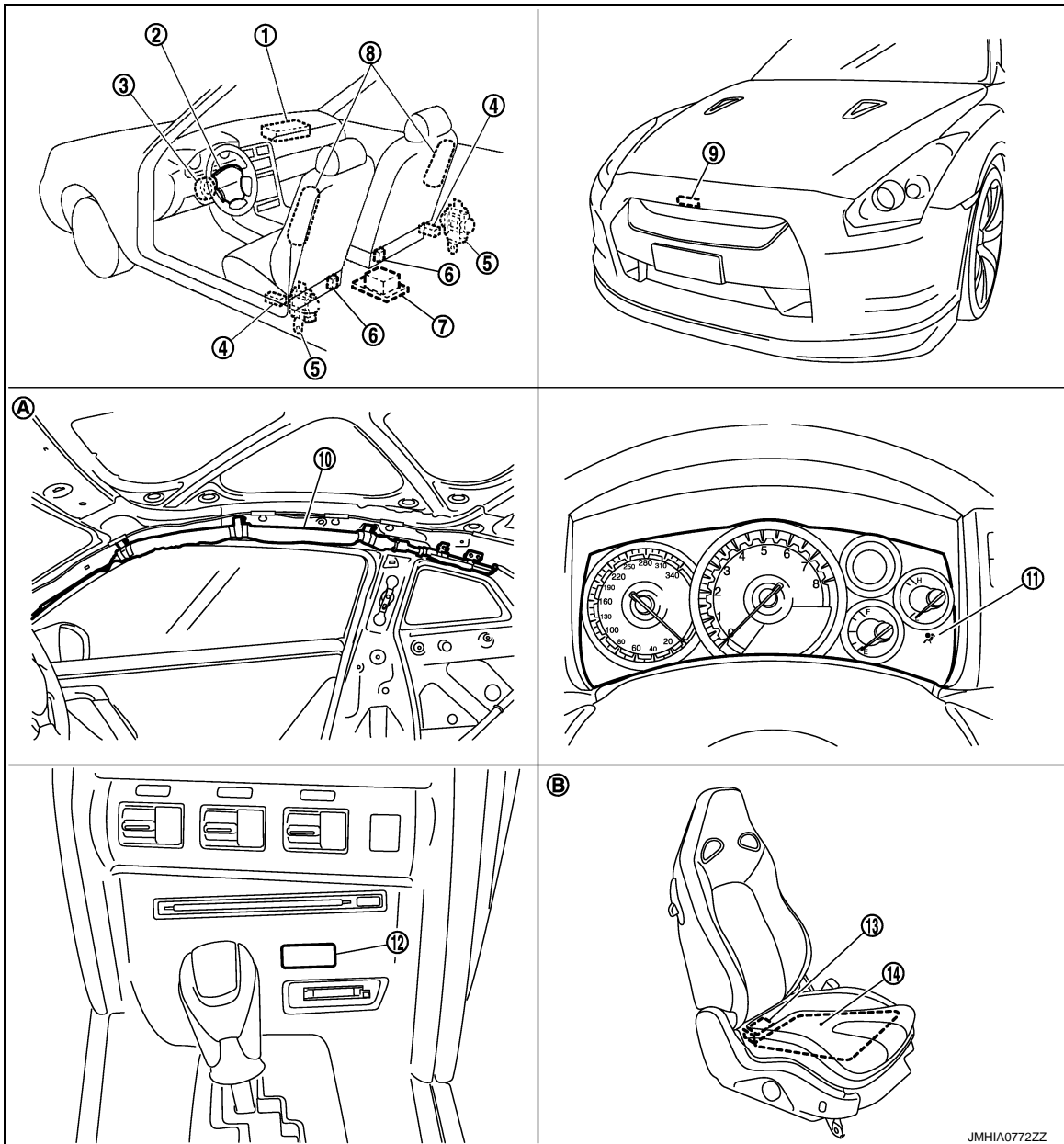
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# SRS AIR BAG SYSTEM

< SYSTEM DESCRIPTION >

## Component Parts Location

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|---|--|--|
| 1. Front passenger air bag module               | 2. Driver air bag module                       | 3. Combination switch (Spiral cable)                     |
| 4. LH/RH satellite sensor                       | 5. Front LH/RH seat belt pre-tensioner         | 6. Seat belt buckle switch (Driver side/ Passenger side) |
| 7. Air bag diagnosis sensor unit                | 8. Front LH/RH side air bag module             | 9. Crash zone sensor                                     |
| 10. LH/RH side curtain air bag module           | 11. Combination meter (air bag warning lamp)   | 12. Front passenger air bag OFF indicator                |
| 13. Occupant Classification System control unit | 14. Occupant Classification System seat sensor |  |
| A. View from vehicle side                       | B. Passenger front seat                        |  |

## Component Description

INFOID:000000009162963

# SRS AIR BAG SYSTEM

## < SYSTEM DESCRIPTION >

Component	Function
Air bag diagnosis sensor unit	Detects a collision and supplies power supply for deployment to air bag module and pre-tensioner seat belt.
Air bag module <ul style="list-style-type: none"> <li>• Driver</li> <li>• Passenger</li> <li>• Front side</li> <li>• Side curtain</li> </ul>	Receives signal from air bag diagnosis sensor unit and deploys air bag.
Front seat belt pre-tensioner	Receives signal from air bag diagnosis sensor unit and deploys pre-tensioner seat belt.
Seat belt buckle switch	Controls deployment timing depending on the seat belt condition that is fastened or unfastened.
Crash zone sensor	Transmits signal to air bag diagnosis sensor unit when a frontal collision occurs.
Satellite sensor (LH/RH)	Transmits signal to air bag diagnosis sensor unit when a side collision occurs.
Occupant Classification System control unit	Detects front passenger seat occupant and judges whether or not deploys front passenger seat air bag.
Combination meter (air bag warning lamp)	Indicates air bag malfunctioning and deployment by blinking and illuminating air bag warning lamp.
Front passenger air bag OFF indicator	Indicates whether or not front passenger air bag is in activation mode subject to the judgement by Occupant Classification System control unit.
Combination switch (spiral cable)	Supplies power supply to driver air bag module on steering wheel.

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# OCCUPANT CLASSIFICATION SYSTEM

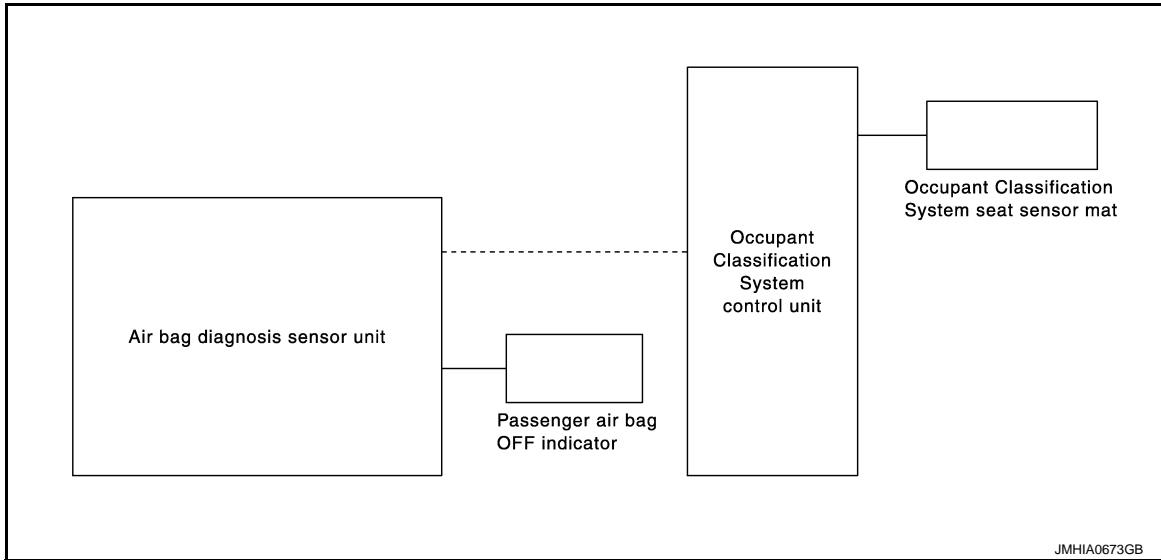
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## OCCUPANT CLASSIFICATION SYSTEM

### System Diagram

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### OCCUPANT CLASSIFICATION SYSTEM



### System Description

INFOID:000000009162965

THIS OCCUPANT CLASSIFICATION SYSTEM HAS THE FOLLOWING FUNCTION.

- Suppress the deployment of front passenger air bag when front passenger seat is empty, or when occupied by child and child-seat. Turns on front passenger air bag OFF indicator when front passenger seat is occupied by child-seat and child.
- Indicates malfunction portion with blinking times of air bag warning lamp in diagnosis mode.
- Indicates the malfunctioning record by CONSULT.

**NOTE:**

Operation of air bag diagnosis sensor unit when air bag diagnosis sensor unit receives information from Occupant Classification System

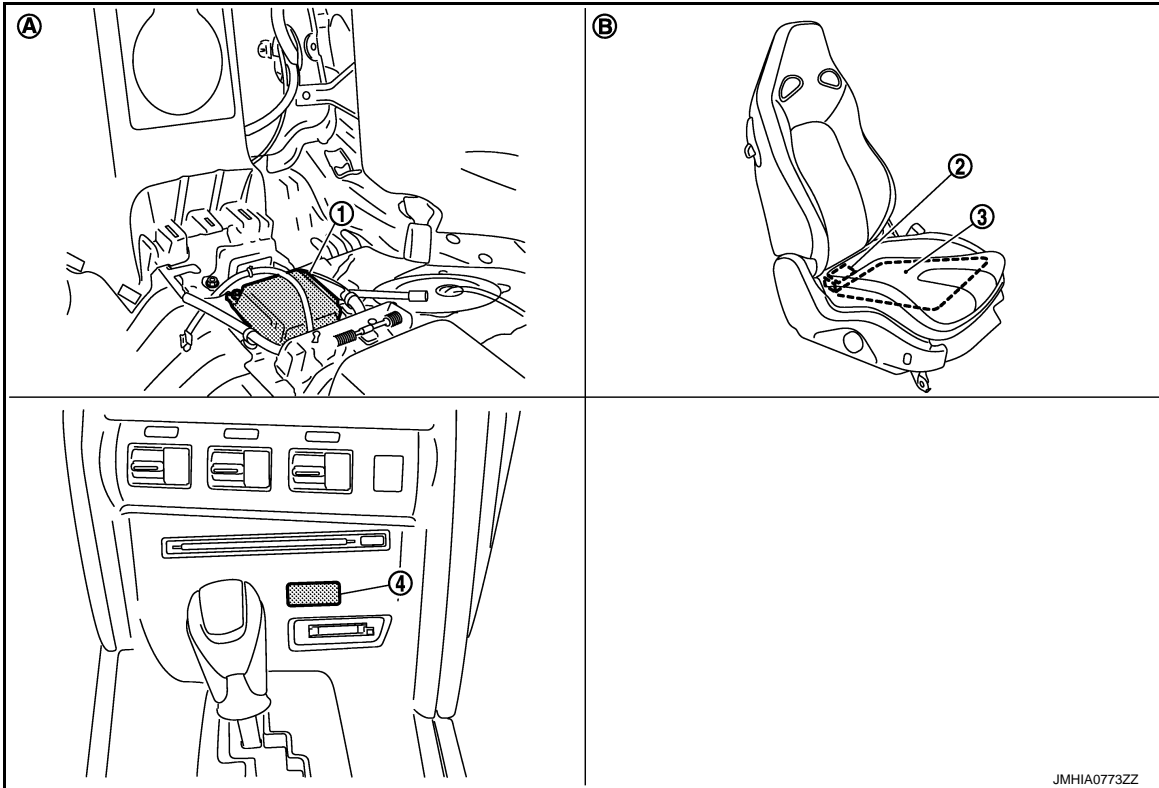
Status (front passenger seat)	Passenger air bag	Front passenger air bag OFF indicator	Air bag warning lamp	Seat belt warning lamp (when front passenger seat is unbuckled)
Empty	Suppress	OFF	OFF	OFF
Child/ child-seat	Suppress	ON	OFF	ON
Adult	Enable to deploy	OFF	OFF	ON
Malfunction	Suppress	ON	Blinking	OFF

# OCCUPANT CLASSIFICATION SYSTEM

< SYSTEM DESCRIPTION >

## Component Parts Location

INFOID:000000009162966



1. Air bag diagnosis sensor unit
  2. Occupant Classification System control unit
  3. Occupant Classification System seat sensor mat
  4. Passenger air bag OFF indicator
- A. View with rear console assembly removed    B. Front passenger seat

Component parts	Outline of function
Occupant Classification System seat sensor mat	Detects if the passenger seat is empty or occupied
Occupant Classification System control unit	Transmits the passenger seat status (occupied or empty) to air bag diagnosis sensor unit
Front passenger air bag OFF indicator	Turns the front passenger air bag OFF indicator lamp ON when the front passenger seat is occupied by a child or a child-seat
Air bag diagnosis sensor unit	Performs the deploy judgement of passenger air bag based on the information from Occupant Classification System control unit

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# DIAGNOSIS SYSTEM (AIRBAG)

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (AIRBAG)

### Diagnosis Description

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#### CAUTION:

- Never use electrical test equipment on any circuit related to the SRS unless instructed in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.
- Never repair, splice or modify the SRS wiring harness. If the harness is damaged, replace it with a new one.
- Keep ground portion clean.

#### DIAGNOSIS FUNCTION

- The SRS self-diagnosis results can be read by using air bag warning lamp.
- The user mode is exclusively prepared for the customer (driver). This mode warns the driver of a system malfunction through the operation of the air bag warning lamp.
- The diagnosis mode allows the technician to locate and inspect the malfunctioning part.
- The mode applications for the air bag warning lamp is as per the following.

	User mode	Diagnosis mode	Display type
Air bag warning lamp	X	X	ON-OFF operation

×: Application, —: Not application

#### HOW TO PERFORM TROUBLE DIAGNOSIS FOR QUICK AND ACCURATE REPAIR

A good understanding of the malfunction conditions can make troubleshooting faster and more accurate. In general, each customer feels differently about a malfunction. It is important to fully understand the symptoms or conditions for a customer complaint.

Information from Customer.

- WHAT..... Vehicle model.
- WHEN..... Date, Frequencies.
- WHERE..... Road conditions.
- HOW..... Operating conditions, Symptoms.

Preliminary Check.

Check that the following parts are in good order.

- Battery (Refer to [PG-3, "How to Handle Battery"](#))
- Fuse (Refer to [PG-24, "Fuse"](#))
- System component-to-harness connections

#### Air Bag Warning Lamp Diagnosis

INFOID:000000009162968

#### SELF-DIAGNOSIS FUNCTION

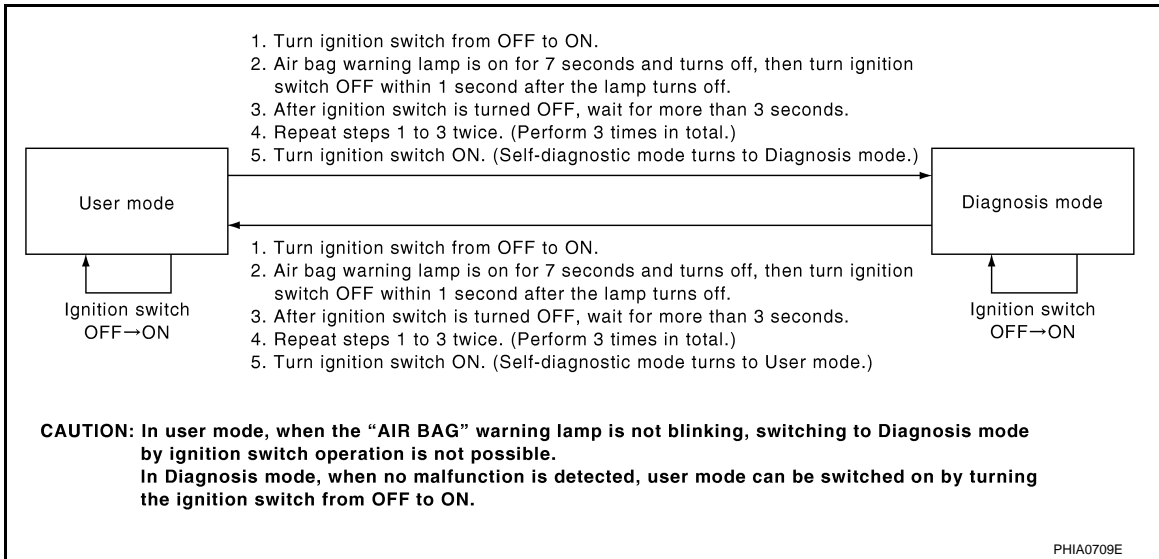
- The reading of these results is accomplished by "User mode" and "Diagnosis mode".
- After a malfunction is repaired, turn ignition switch ON. Diagnosis mode returns to the user mode. At that time, the self-diagnosis result is cleared.



# DIAGNOSIS SYSTEM (AIRBAG)

## < SYSTEM DESCRIPTION >

### HOW TO CHANGE SELF-DIAGNOSIS MODE WITHOUT CONSULT



### DIAGNOSTIC PROCEDURE (USER MODE)

Checking air bag operation according to air bag warning lamp-User mode

1. Turn the ignition switch from OFF to ON, and check that the air bag warning lamp blinks.
2. Compare the air bag warning lamp blinking pattern with the examples.



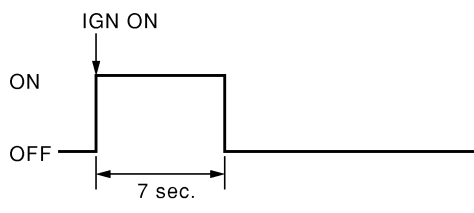
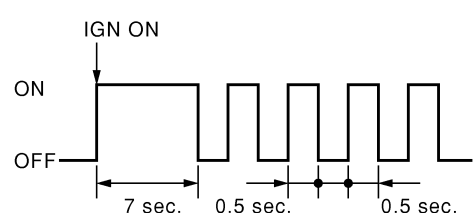
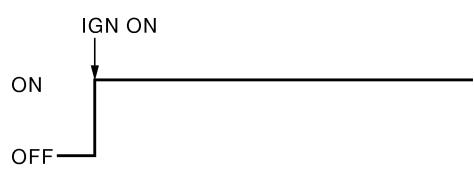
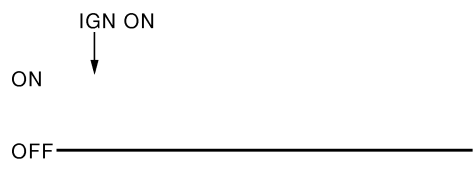
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# DIAGNOSIS SYSTEM (AIRBAG)

## < SYSTEM DESCRIPTION >

### Air bag warning lamp examples (User mode)

Air bag warning lamp operation -User mode	SRS condition
 <p style="text-align: right;">SHIA0011E</p>	<ul style="list-style-type: none"> <li>• No malfunction is detected</li> <li>• No further action is necessary</li> </ul>
 <p style="text-align: right;">SHIA0012E</p>	<ul style="list-style-type: none"> <li>• The system is malfunctioning and needs to be repaired as indicated</li> </ul>
 <p style="text-align: right;">SHIA0013E</p>	<ul style="list-style-type: none"> <li>• Air bag is deployed</li> <li>• Seat belt pre-tensioner is deployed</li> </ul>
 <p style="text-align: right;">SHIA0014E</p>	<ul style="list-style-type: none"> <li>• Air bag diagnosis sensor unit is malfunctioning</li> <li>• Air bag warning lamp circuit is malfunctioning</li> </ul>

# DIAGNOSIS SENSOR UNIT


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## ECU DIAGNOSIS INFORMATION

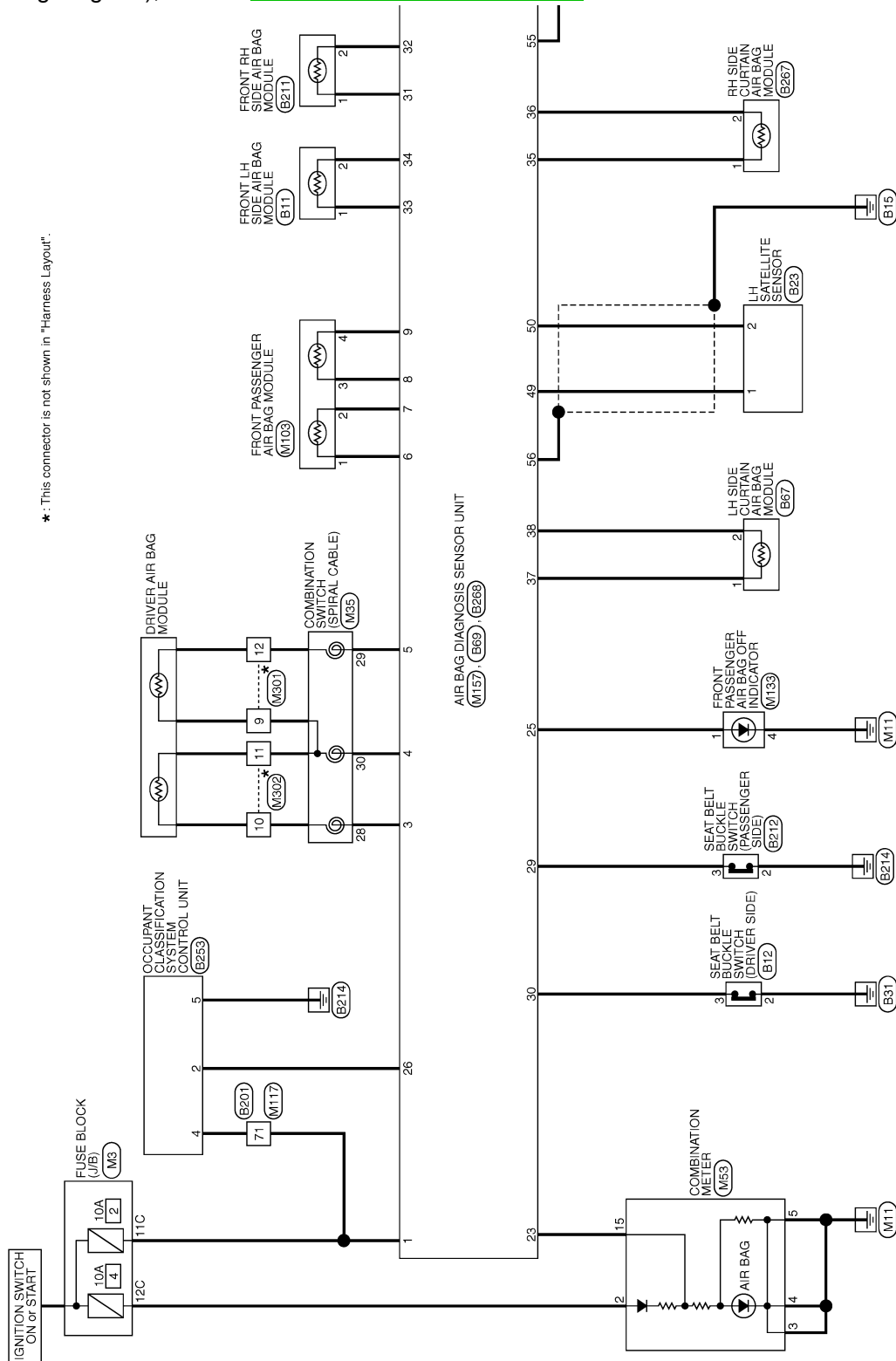
### DIAGNOSIS SENSOR UNIT

#### Wiring Diagram - SRS AIR BAG CONTROL SYSTEM -

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For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-12. "Connector Information"](#).

#### SRS AIR BAG CONTROL SYSTEM



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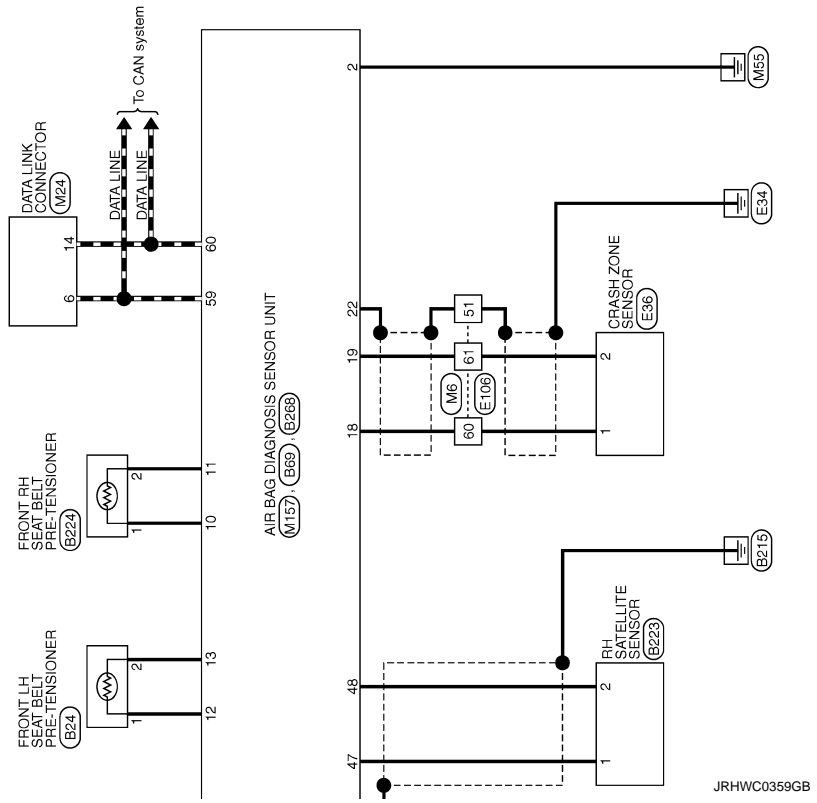
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# DIAGNOSIS SENSOR UNIT

< ECU DIAGNOSIS INFORMATION >



# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009163145

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

#### **WARNING:**

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### **WARNING:**

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

#### Service

INFOID:000000009163146

- Do not use electrical test equipment to check SRS circuits unless instructed to in this Service Manual.
- Before servicing the SRS, turn ignition switch OFF, disconnect battery negative terminal and wait at least 3 minutes.  
For approximately 3 minutes after the battery negative terminal is removed, it is still possible for the air bag and seat belt pre-tensioner to deploy. Therefore, do not work on any SRS connectors or wires until at least 3 minutes have elapsed.
- Diagnosis sensor unit must always be installed with their arrow marks "←" pointing towards the front of the vehicle for proper operation. Also check diagnosis sensor unit for cracks, deformities or rust before installation and replace as required.
- The spiral cable must be aligned in the neutral position since its rotations are limited. Do not turn steering wheel and column after removal of steering gear.
- Handle air bag module carefully. Always place driver and front passenger air bag modules with the pad side facing upward and seat mounted front side air bag module standing with the stud bolt side facing down.
- Conduct self-diagnosis to check entire SRS for proper function after replacing any components.
- After air bag inflates, the front instrument panel assembly should be replaced if damaged.
- Always replace instrument panel pad following front passenger air bag deployment.

#### Occupant Classification System Precaution

INFOID:000000009163147

- Replace Occupant Classification System control unit and passenger front seat cushion as an assembly. Refer to [SE-49, "Removal and Installation"](#).