

SECTION **SBC**

SEAT BELT CONTROL SYSTEM

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000009161807

DETAILED FLOW

1.OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain as much malfunction information (conditions and environment when the malfunction occurred) as possible when the customer brings the vehicle in.

>> GO TO 2.

2.REPRODUCE THE MALFUNCTION INFORMATION

Check the malfunction on the vehicle that the customer describes.
Inspect the relation of the symptoms and the condition when the symptoms occur.

>> GO TO 3.

3.IDENTIFY THE MALFUNCTIONING SYSTEM WITH "SYMPTOM DIAGNOSIS"

Use "Symptom diagnosis" from the symptom inspection result in step 2 and then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 4.

4.IDENTIFY THE MALFUNCTIONING PARTS WITH "COMPONENT DIAGNOSIS"

Perform the diagnosis with "Component diagnosis" of the applicable system.

>> GO TO 5.

5.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 6.

6.FINAL CHECK

Check that the malfunction is not reproduced, referring to the symptom inspection result in step 2.

Are the malfunctions corrected?

YES >> INSPECTION END
NO >> GO TO 3.

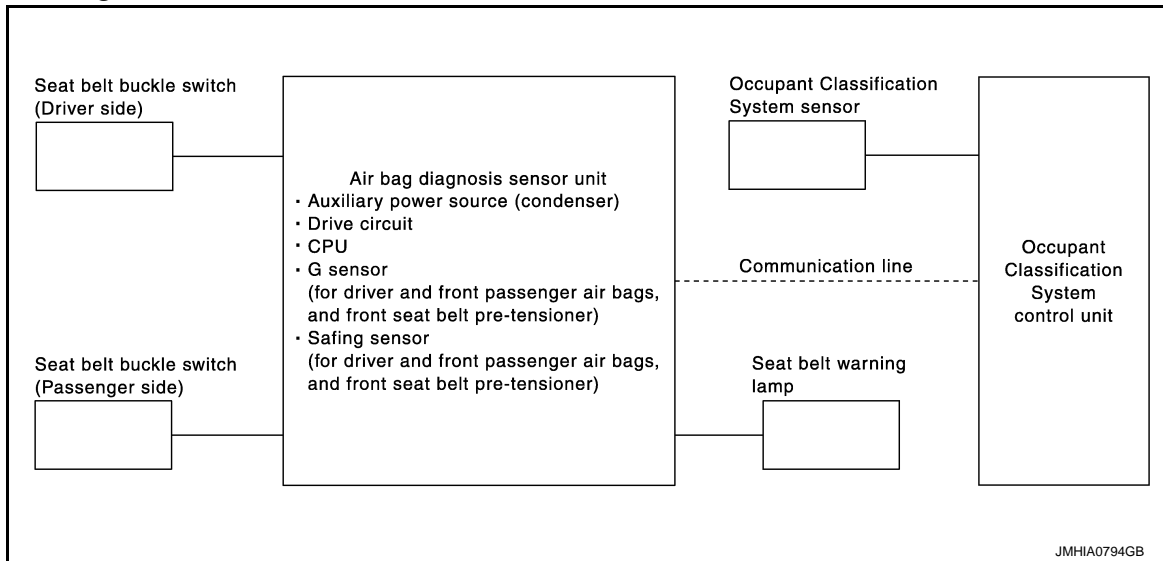
SEAT BELT WARNING SYSTEM

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

SEAT BELT WARNING SYSTEM

System Diagram



System Description

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- Turns ON seat belt warning lamp, when the Occupant Classification System judges adult or child in the front passenger seat and the passenger seat belt buckle switch is OFF.
- Operation of air bag diagnosis sensor unit when air bag diagnosis sensor unit receives information from Occupant Classification System.
- In addition, seat belt warning lamp illuminates, when the driver side seat belt is not fasten. This does not relate to the air bag diagnosis sensor unit.
- For driver seat belt function, refer to [MWI-3. "METER SYSTEM : System Diagram"](#)

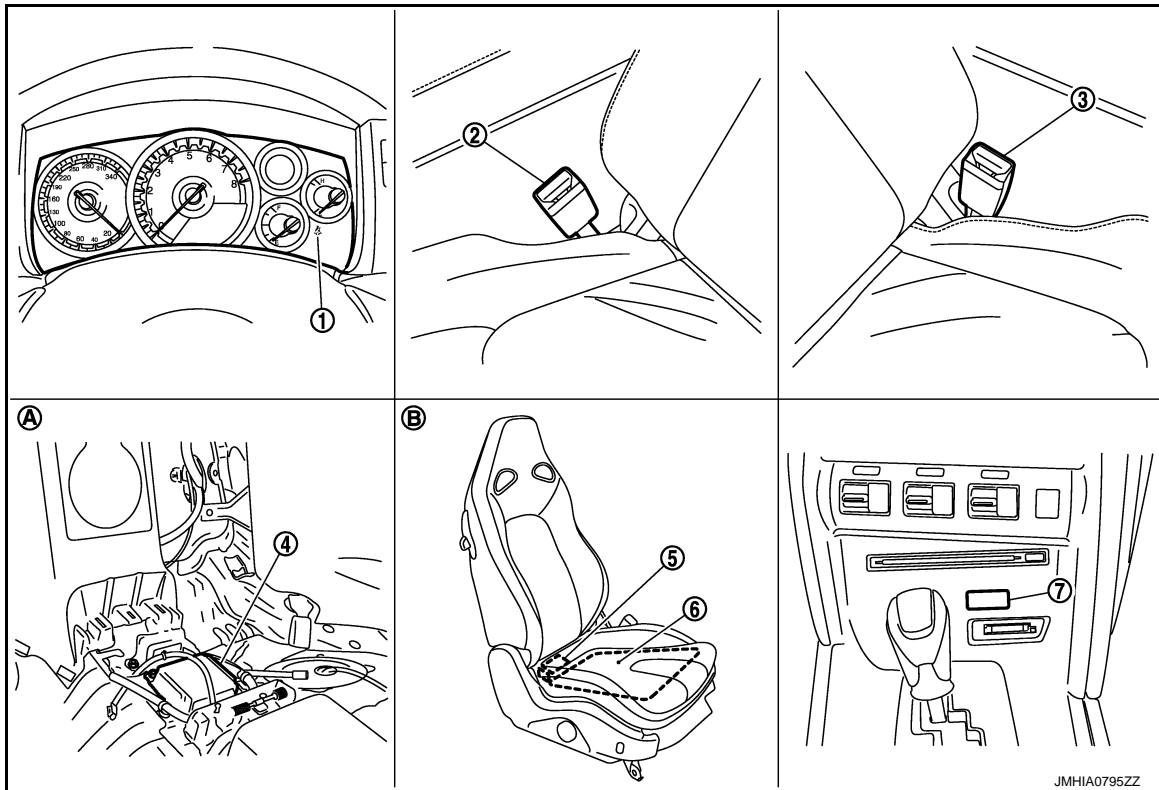
Status (front passenger seat)	Seat belt warning lamp (When front passenger seat is unbuckled)
Empty	OFF
An object	OFF
Child/ child-seat	ON
Adult	ON
Malfunction	OFF

SEAT BELT WARNING SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location

INFOID:000000009161810



- | | | |
|-----------------------------------------------|------------------------------------------------|-----------------------------------------------|
| 1. Combination meter (Seat belt warning lamp) | 2. Seat belt buckle switch (Driver side) | 3. Seat belt buckle switch (Passenger side) |
| 4. Air bag diagnosis sensor unit | 5. Occupant Classification System control unit | 6. Occupant Classification System seat sensor |
| 7. Front passenger air bag OFF indicator | | |
| A. View with rear console assembly removed | B. Front passenger seat | |

Component Description

INFOID:000000009161811

Component parts	Outline of function
Seat belt buckle switch (Driver side)	Detects if the seat belt buckle switch (driver side) is fastened or unfastened
Seat belt buckle switch (Passenger side)	Detects if the seat belt buckle switch (passenger side) is fastened or unfastened
Seat belt warning lamp	Turns the seat belt warning lamp ON when the seat belt is unfastened
Occupant Classification System control unit	Judges the passenger seat condition based on the information from Occupant Classification System control unit
Occupant Classification System seat sensor	Detects if the passenger seat is empty or occupied
Air bag diagnosis sensor unit	Turns ON seat belt warning lamp based on the information from Occupant Classification System control 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

SEAT BELT BUCKLE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

SEAT BELT BUCKLE SWITCH

DRIVER SIDE

DRIVER SIDE : Description

INFOID:000000009161812

- Performs the control of tension reducer according to the seat belt buckle switch ON/OFF.
- Detects whether or not the seat belt is fastened when the ignition switch turns ON. If the seat belt is not fastened, illuminates the seat belt warning lamp on the combination meter.
- The seat belt buckle switch is installed in the seat belt buckle.

DRIVER SIDE : Component Function Check

INFOID:000000009161813

1.CHECK SEAT BELT BUCKLE SWITCH

When checking "BUCKLE SW" in DATA MONITOR in METER/M&A, check that ON/OFF display changes synchronized with the insertion operation to the seat belt buckle.

Monitor item	Condition
BUCKLE SW	When driver side seat belt is not fastened: ON
	When driver side seat belt is fastened: OFF

Is the inspection result normal?

- YES >> Seat belt buckle switch (driver side) circuit is normal.
 NO >> Refer to [SBC-5. "DRIVER SIDE : Diagnosis Procedure"](#).

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DRIVER SIDE : Diagnosis Procedure

INFOID:000000009161814

1.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between seat belt buckle switch (driver side) harness connector and ground.

(+)		(-)	Condition	Voltage (V) (Approx.)
Connector	Terminal			
B12	3	Ground	When driver side seat belt is fastened	Battery voltage
			When driver side seat belt is not fastened	0

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> GO TO 2.

2.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter and seat belt buckle switch (driver side) connector.
3. Check continuity between combination meter harness connector and seat belt buckle switch (driver side) harness connector.

Combination meter		Seat belt buckle switch (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
M53	30	B12	3	Existed

4. Check continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	30		Not existed

SEAT BELT BUCKLE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> Repair or replace combination meter.

NO >> Repair or replace harness between combination meter and seat belt buckle switch (driver side).

3.CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

Check continuity between seat belt buckle switch (driver side) harness connector and ground.

Seat belt buckle switch (driver side)		Ground	Continuity
Connector	Terminal		
B12	2		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness between seat belt buckle switch and ground.

4.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Check seat belt buckle switch (driver side). Refer to [SBC-6. "DRIVER SIDE : Component Inspection \(Belt Buckle Switch\)".](#)

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace seat belt buckle switch (driver side).

DRIVER SIDE : Component Inspection (Belt Buckle Switch)

INFOID:000000009161815

1.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

1. Turn ignition switch OFF
2. Disconnect seat belt buckle switch connector.
3. Check continuity of seat belt buckle (driver side).

Seat belt buckle switch (driver side)		Condition	Continuity
Terminal			
2	3	When driver side seat belt is not fastened	Existed
		When driver side seat belt is fastened	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace seat belt buckle switch (driver side).

PASSENGER SIDE

PASSENGER SIDE : Description

INFOID:000000009161816

- Performs the control of tension reducer according to the seat belt buckle switch ON/OFF.
- Detects whether or not the seat belt is fastened when the ignition switch turns ON. If the seat belt switch is not fastened, illuminates the seat belt warning lamp on the combination meter.
- The seat belt buckle switch is installed in the seat belt buckle.

PASSENGER SIDE : Component Function Check

INFOID:000000009161817

1.CHECK SEAT BELT WARNING FUNCTION

1. Sit down to passenger seat.
2. Check that seat belt warning lamp turns OFF when passenger seat belt is fastened, and then turns ON when passenger seat belt is unfastened.

Is the inspection result normal?

YES >> Seat belt buckle switch (passenger side) circuit is normal.

NO >> Refer to [SBC-7. "PASSENGER SIDE : Diagnosis Procedure".](#)

SEAT BELT BUCKLE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

PASSENGER SIDE : Diagnosis Procedure

INFOID:000000009161818

1. CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE) CIRCUIT

1. Turn ignition switch ON.
2. Check that voltage between seat belt buckle switch (passenger side) and ground.

(+)		(-)	Condition	Voltage (V) (Approx.)
Seat belt buckle switch (passenger side)				
Connector	Terminal			
B212	3	Ground	When passenger side seat belt is fastened	2.0 or more
			When passenger side seat belt is not fastened	0

Is the inspection result normal?

- YES >> GO TO 3.
NO >> GO TO 2.

2. CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect air bag diagnosis sensor unit connector and seat belt buckle switch (passenger side) connector.
3. Check continuity between air bag diagnosis sensor unit harness connector and seat belt buckle switch (passenger side) harness connector.

Air bag diagnosis sensor unit		Seat belt buckle switch (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B268	29	B212	3	Existed

4. Check continuity between air bag diagnosis sensor unit harness connector and ground.

Air bag diagnosis sensor unit		Ground	Continuity
Connector	Terminal		
B268	29		Not existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Repair or replace harness between air bag diagnosis sensor unit and seat belt buckle switch (passenger side).

3. CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

Check continuity between seat belt buckle switch (passenger side) harness connector and ground.

Seat belt buckle switch (passenger side)		Ground	Continuity
Connector	Terminal		
B212	2		Existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair or replace harness between seat belt buckle switch and ground.

4. CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)

Check seat belt buckle switch (passenger side). Refer to [SBC-8. "PASSENGER SIDE : Component Inspection \(Belt Buckle Switch\)".](#)

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace seat belt buckle switch (passenger side).

SEAT BELT BUCKLE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

PASSENGER SIDE : Component Inspection (Belt Buckle Switch)

INFOID:000000009161819

1. CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch connector.
3. Check continuity of seat belt buckle (passenger side).

Seat belt buckle switch (passenger side)		Condition	Continuity
Terminal			
2	3	When driver side seat belt is not fastened	Existed
		When driver side seat belt is fastened	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace seat belt buckle switch (passenger side).

SEAT BELT WARNING LAMP

< DTC/CIRCUIT DIAGNOSIS >

SEAT BELT WARNING LAMP

Diagnosis Procedure

INFOID:000000009161820

1. CHECK COMBINATION METER GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect air bag diagnosis sensor unit connector.
3. Driver seat belt is fastened.
4. Turn the ignition switch ON.
5. Check that voltage between air bag diagnosis sensor unit harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
Air bag diagnosis sensor unit			
Connector	Terminal	Ground	Battery voltage
M157	24		

Is the inspection result normal?

- YES >> Replace air bag diagnosis sensor unit.
NO >> GO TO 2.

2. CHECK COMBINATION METER GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector and air bag diagnosis sensor unit harness connector.

Combination meter		Air bag diagnosis sensor unit		Continuity
Connector	Terminal	Connector	Terminal	
M53	29	M157	24	Existed

4. Check continuity between combination meter and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	29		Not existed

Is the inspection result normal?

- YES >> Replace combination meter.
NO >> Repair or replace harness between combination meter and air bag diagnosis sensor unit.


SEAT BELT WARNING SYSTEM

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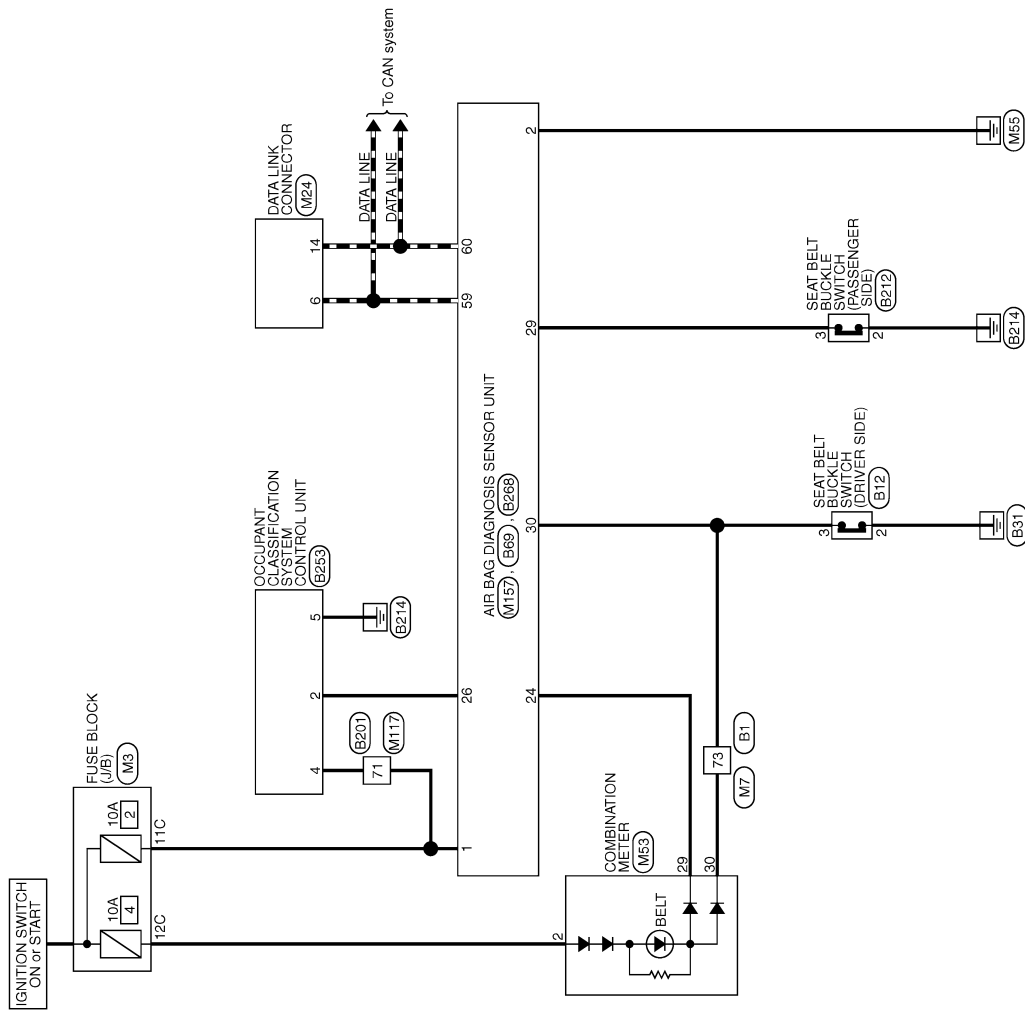
SEAT BELT WARNING SYSTEM

Wiring Diagram - SEAT BELT WARNING 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"](#).

SEAT BELT WARNING SYSTEM



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DIAGNOSIS SENSOR UNIT


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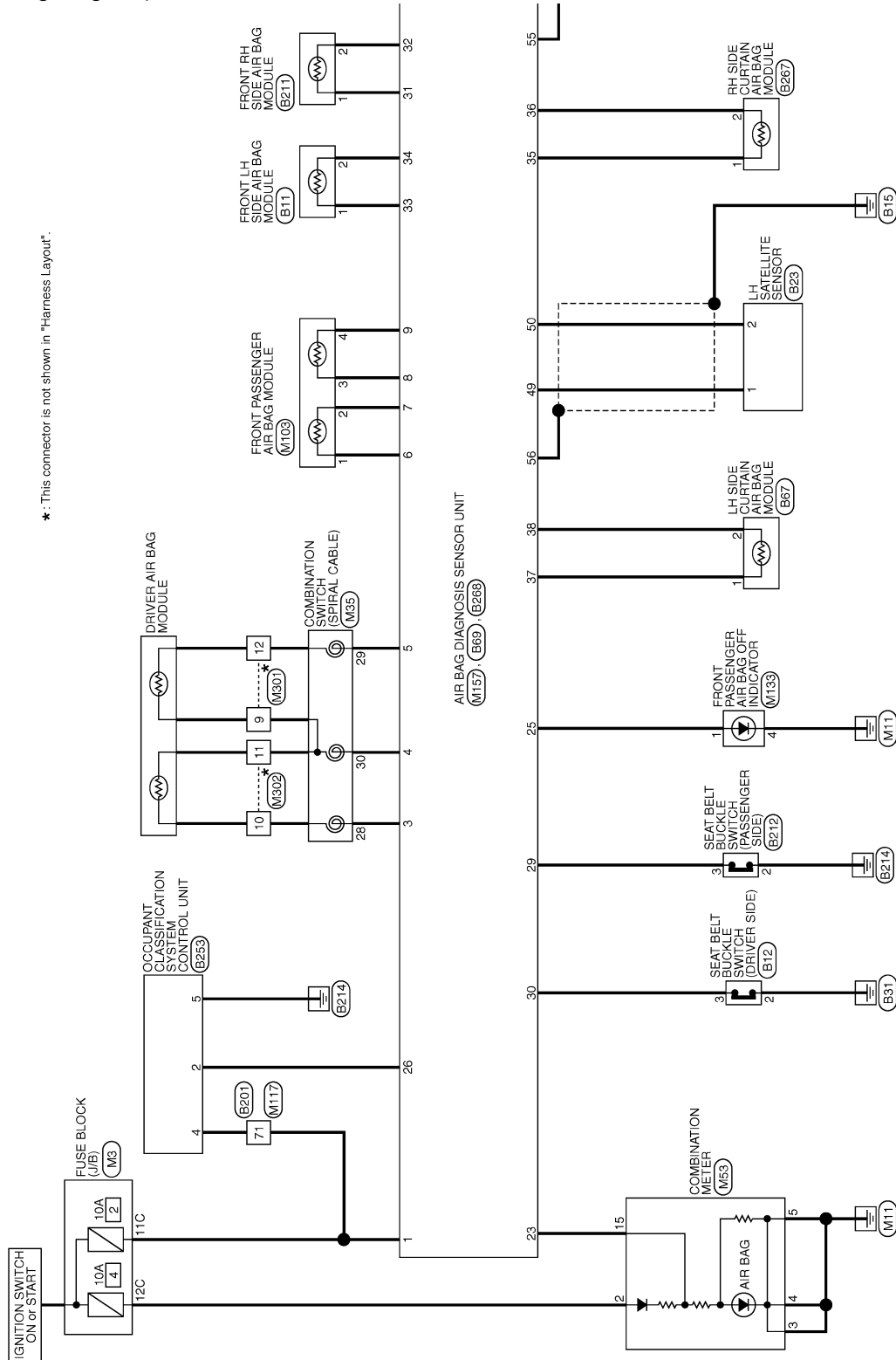
DIAGNOSIS SENSOR UNIT

Wiring Diagram - SRS AIR BAG CONTROL SYSTEM -

INFOID:000000009161823

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



*: This connector is not shown in "Harness Layout".

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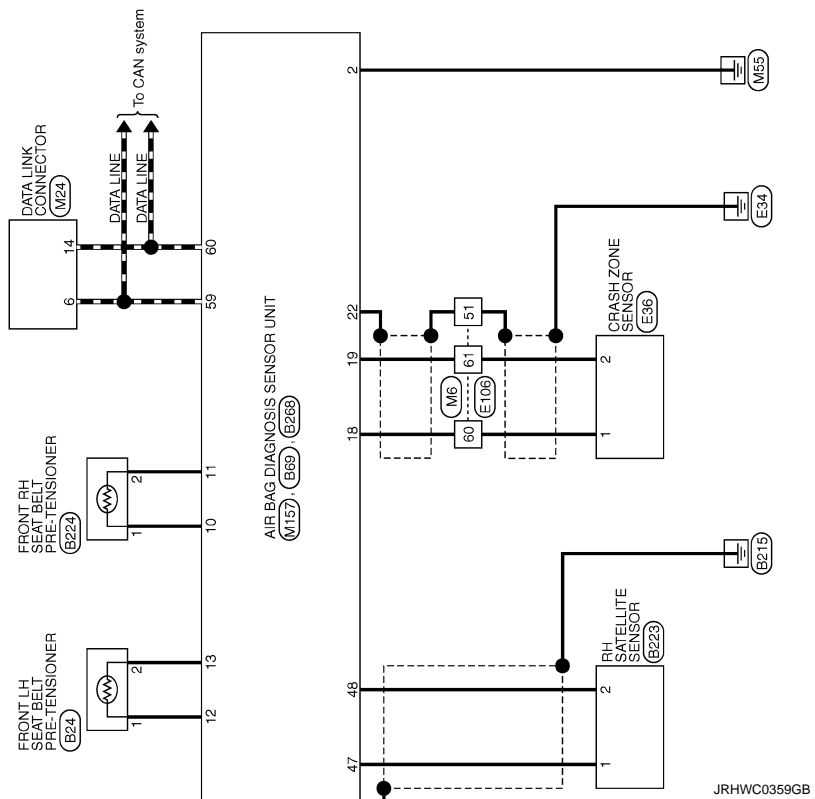
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DIAGNOSIS SENSOR UNIT

< ECU DIAGNOSIS INFORMATION >



SEAT BELT WARNING LAMP DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

SEAT BELT WARNING LAMP DOES NOT TURN OFF

Diagnosis Procedure

INFOID:000000009161824

1. CHECK SEAT BELT BUCKLE SWITCH CIRCUIT (DRIVER SIDE)

Check seat belt buckle switch circuit (driver side). Refer to [SBC-5, "DRIVER SIDE : Component Function Check"](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

2. CHECK SEAT BELT BUCKLE SWITCH CIRCUIT (PASSENGER SIDE)

Check seat belt buckle switch circuit (passenger side). Refer to [SBC-6, "PASSENGER SIDE : Component Function Check"](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace the malfunctioning parts.

3. CHECK SEAT BELT WARNING LAMP CIRCUIT

Check seat belt warning lamp circuit. Refer to [SBC-9, "Diagnosis Procedure"](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace the malfunctioning parts.

4. CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-38, "Intermittent Incident"](#).

NO >> GO TO 1.

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000009161826

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.

Precaution for Seat Belt Service

INFOID:000000009161827

CAUTION:

- Before removing the seat belt pre-tensioner assembly, turn the ignition switch off, disconnect the both battery cables and wait at least 3 minutes.
- Do not use electrical test equipment for seat belt pre-tensioner connector.
- After replacing or reinstalling seat belt pre-tensioner assembly, or reconnecting front seat belt pre-tensioner connector, check the system function. Refer to [SRC-8, "Diagnosis Description"](#).
- Do not use disassemble buckle or seat belt assembly.
- Replace anchor bolts if they are deformed or worn out.
- Never oil tongue and buckle.
- If any component of seat belt assembly is questionable, do not repair. Replace the whole seat belt assembly.
- If webbing is cut, frayed, or damaged, replace seat belt assembly.
- When replacing seat belt assembly, use a genuine NISSAN seat belt assembly.

AFTER A COLLISION

WARNING:

Inspect all seat belt assemblies including retractors and attaching hardware after any collision. NISSAN recommends that all seat belt assemblies in use during a collision be replaced unless the collision was minor and the belts show no damage and continue to operate properly. Failure to do so could result in serious personal injury in an accident. Seat belt assemblies not in use during a collision should also be replaced if either damage or improper operation is noted. Seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision in which the air bags are deployed.

PRECAUTIONS

< PRECAUTION >

Replace any seat belt assembly (including anchor bolts) if:

- The seat belt was in use at the time of a collision (except for minor collisions and the belts, retractors and buckles show no damage and continue to operate properly).
- The seat belt was damaged in an accident. (i.e. torn webbing, bent retractor or guide).
- The seat belt attaching point was damaged in an accident. Inspect the seat belt attaching area for damage or distortion and repair as necessary before installing a new seat belt assembly.
- Anchor bolts are deformed or worn out.
- The seat belt pre-tensioner should be replaced even if the seat belts are not in use during the collision in which the air bags are deployed.

Precaution for Battery Service

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Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

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