

Classification:

RS14-012a

Reference:

ITB14-042a

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Date:

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2-SENSOR OCCUPANT CLASSIFICATION SYSTEM DIAGNOSTICS AND INFORMATION

This bulletin has been amended. Changes have been made on all pages.
Please discard previous versions of this bulletin.

APPLIED VEHICLES: 2013 JX (L50)
2014 - 2015 QX60 (L50)
2014 - 2015 QX60 Hybrid (L50)
2014 - 2015 Q50 (V37)
2014 - 2015 Q50 Hybrid (V37)

INTRODUCTION

Infiniti is issuing this Technical Service Bulletin to further clarify for Service Advisors and Service Technicians how to correctly diagnose potential Occupant Classification Systems (OCS) issues, and also how to explain to customers when the (OCS) in their vehicle is operating normally, as described in the Owner's Manual. This TSB applies only to vehicles using the 2-sensor OCS, and explains the procedures necessary to confirm that this type of OCS is operating as designed.

Because the OCS is designed to respond to different occupant seating postures, this TSB provides information on how to evaluate OCS performance in that context, with an Appendix to be used to assist customers in understanding appropriate seating posture which will facilitate correct OCS operation.

INSTRUCTIONS

Before attempting any diagnostics and repairs, service technicians must familiarize themselves with the subject OCS system by reading the SERVICE INFORMATION section of this bulletin (pages 2-3).

Do not attempt any repairs unless "improper operation" of the OCS is confirmed. Refer to **Quick Reference Diagnostic Flow Charts** for Passenger Air Bag Indicator Light (page 4), Seat Belt Warning Light (page 5), and Supplemental Restraint System with DTC B00A0 (page 6).

Infiniti Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. **NOTE:** If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Infiniti dealer to determine if this applies to your vehicle.

SERVICE INFORMATION

NOTE:

- If you confirm a vehicle is subject to any Voluntary Recall Campaign that has not been performed, perform it immediately.
- The following campaigns related to OCS may apply to a vehicle you are working on:
 - ITB13-011 (Recall Campaign # PC217)
 - ITB14-015 (Recall Campaign # R1404)
 - ITB15-031 (Recall Campaign # PC407)

System Background

The Occupant Classification System (OCS) is designed to classify the front seat occupant and automatically turn OFF (inhibit) the passenger air bag under some conditions. **Section 1 of the Owner's Manual** has a detailed description of how the occupant classification system is designed to operate in accordance with federal regulations. The issues being described may indicate normal operation, depending on the size of the passenger seat occupant. We urge the customer to please read that section of the Owner's Manual.

NOTE: In the following sections, the Passenger Air Bag Indicator light (also known as the Passenger Air Bag status light) is referred to as the PABI light ().



Basic Operation

Please use **Table A** to verify and understand the operation of the 2-sensor OCS.

To use the chart, please buckle the driver seat belt. If diagnosing/testing with a passenger, the passenger needs to be unbuckled to obtain seat belt light status as shown in the table below.





Please note that leaving the passenger seat unbuckled is **ONLY** for diagnostic purposes while the vehicle is **NOT MOVING** in the service area of the dealership.

Table A

CONDITION	DESCRIPTION	PABI LIGHT () RESULT	SEAT BELT LIGHT () RESULT	FRONT PASSENGER AIR BAG STATUS
Empty	Empty front passenger seat	OFF (dark)	OFF (dark)	INHIBITED
Nobody	Bag (computer, duffle, etc.) in the front passenger seat	ON (illuminated)	OFF (dark)	INHIBITED
Somebody	Child or adult of small stature in the front passenger seat	ON (illuminated)	ON (illuminated)	INHIBITED
Adult	Average size adult in the front passenger seat	OFF (dark)	ON (illuminated)	ACTIVATED

NOTE: Air bag data monitor in CONSULT-III plus will indicate front passenger air bag status in real time.

Potential Concerns and Appropriate Procedures

1. Child seated in the front passenger seat and the PABI light () is OFF (dark), meaning the front passenger air bag is enabled and may deploy in a crash.
 - First, urge the customer to immediately heed the Owner's Manual instructions and place all children in the back seat, properly belted and restrained in the child restraint system as needed.
2. Adult seated in the front passenger seat and the PABI light () is ON (illuminated), meaning the front passenger air bag is inhibited and will not deploy in a crash.
 - Perform regular diagnostic repairs.
3. General complaints of PABI light () ON (illuminated) for some occupants, and OFF (dark) for others.
 - Urge the customer to review the Owner's Manual. System operation may be appropriate unless their description of the size of the occupants is inconsistent with the Owner's Manual.
4. Complaints of the PABI light () illuminating and going OFF (dark) intermittently when the seat is occupied by a small stature occupant.
 - Urge the customer to review their vehicle's Owner's Manual.
 - Suggest the following:
 - i. Position the passenger seat as far back as possible.
 - ii. Sit as upright as possible in the center of the seat cushion with the seatback in the upright position.
 - iii. Sit back into the seat (not on the front edge) and place your feet flat on the floor.
 - iv. Allow time for the system to properly classify the front passenger before pulling away from a stopped condition.
 - v. Always use your seat belt properly.

Reminders

1. If there are customer concerns of the system taking longer than anticipated to classify the front passenger during a stopped condition, please suggest decreasing A/C fan speed until the classification is complete.

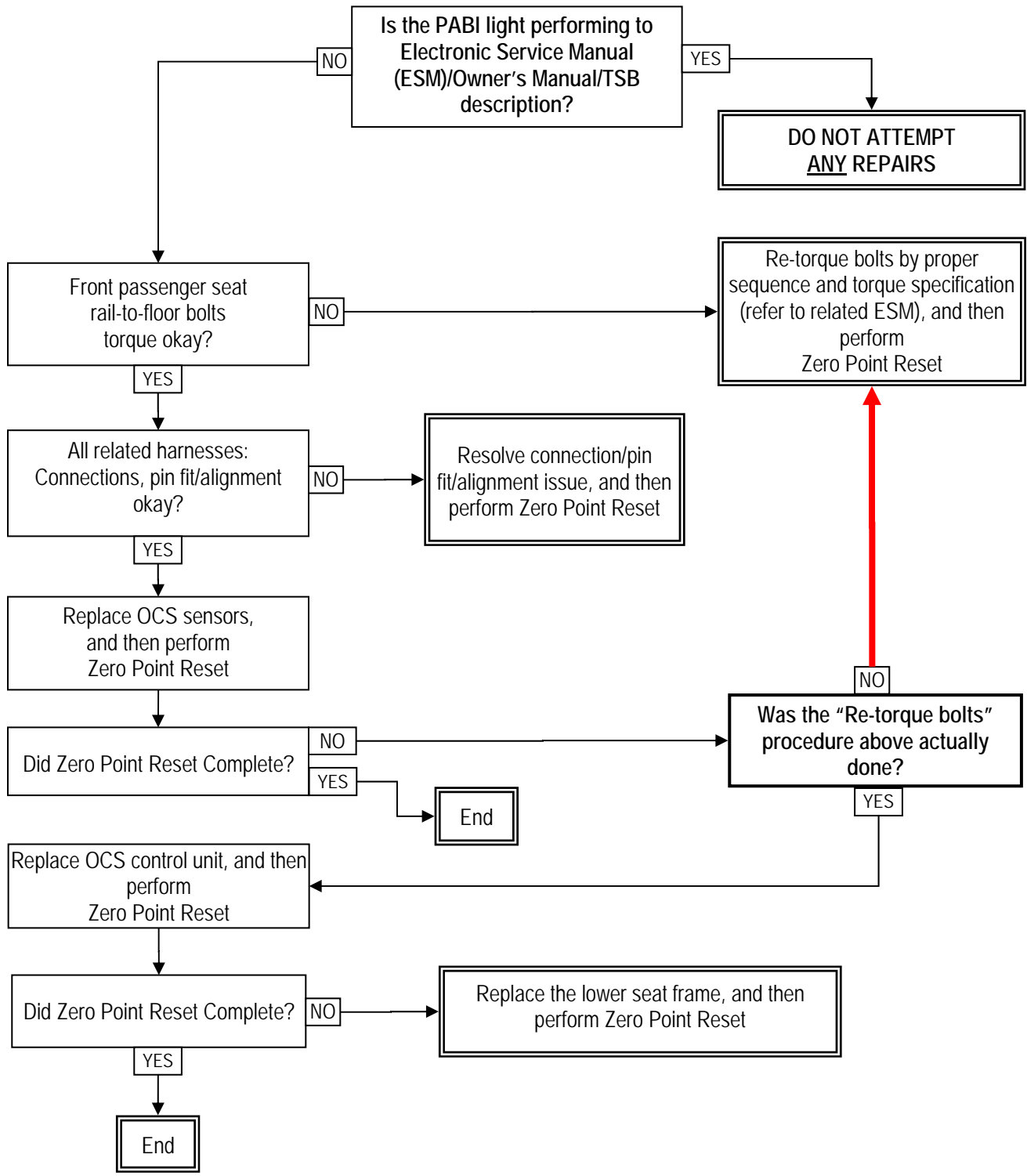
NOTE: Classification is primarily done while the vehicle is at idle and not moving. This is the best condition to accurately classify the passenger using the sensors under the passenger seat. Maximum fan speed can increase the time required for accurate classification.
2. The PABI light only indicates the status of the front passenger air bag. All other air bags are unaffected.
3. All air bags are **supplemental** restraint systems. Please remind customers to always use seat belts and child restraints properly as explained in the vehicle Owner's Manual.
4. No children in the front seat!

Quick Reference Diagnostic Flow Charts

Passenger Air Bag Indicator (PABI) Light Flow Chart



Example of PABI light

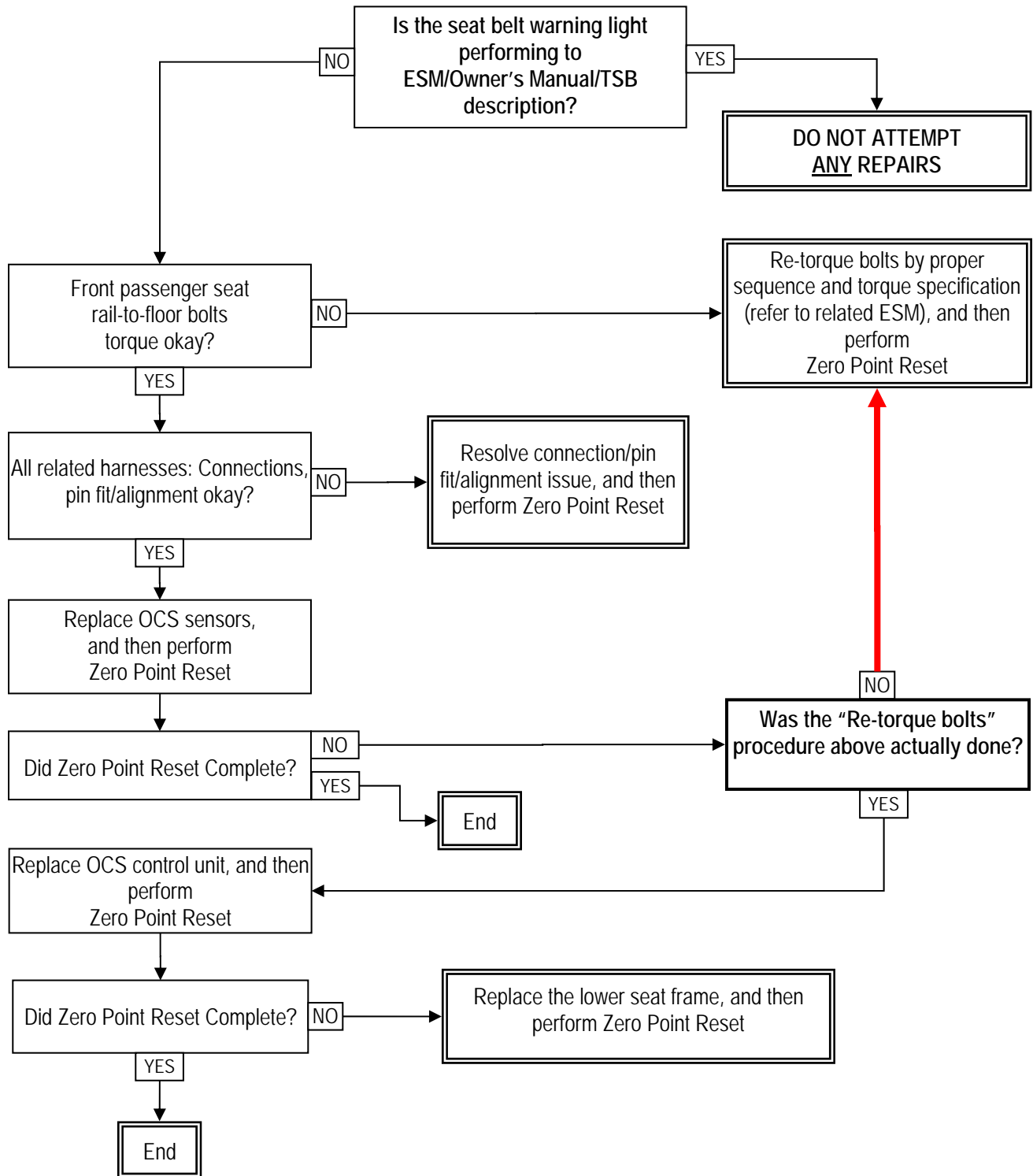


Seat Belt Warning Light Flow Chart

NOTE: This flow chart is NOT for seat belt buckle related issues.



Example of seatbelt warning

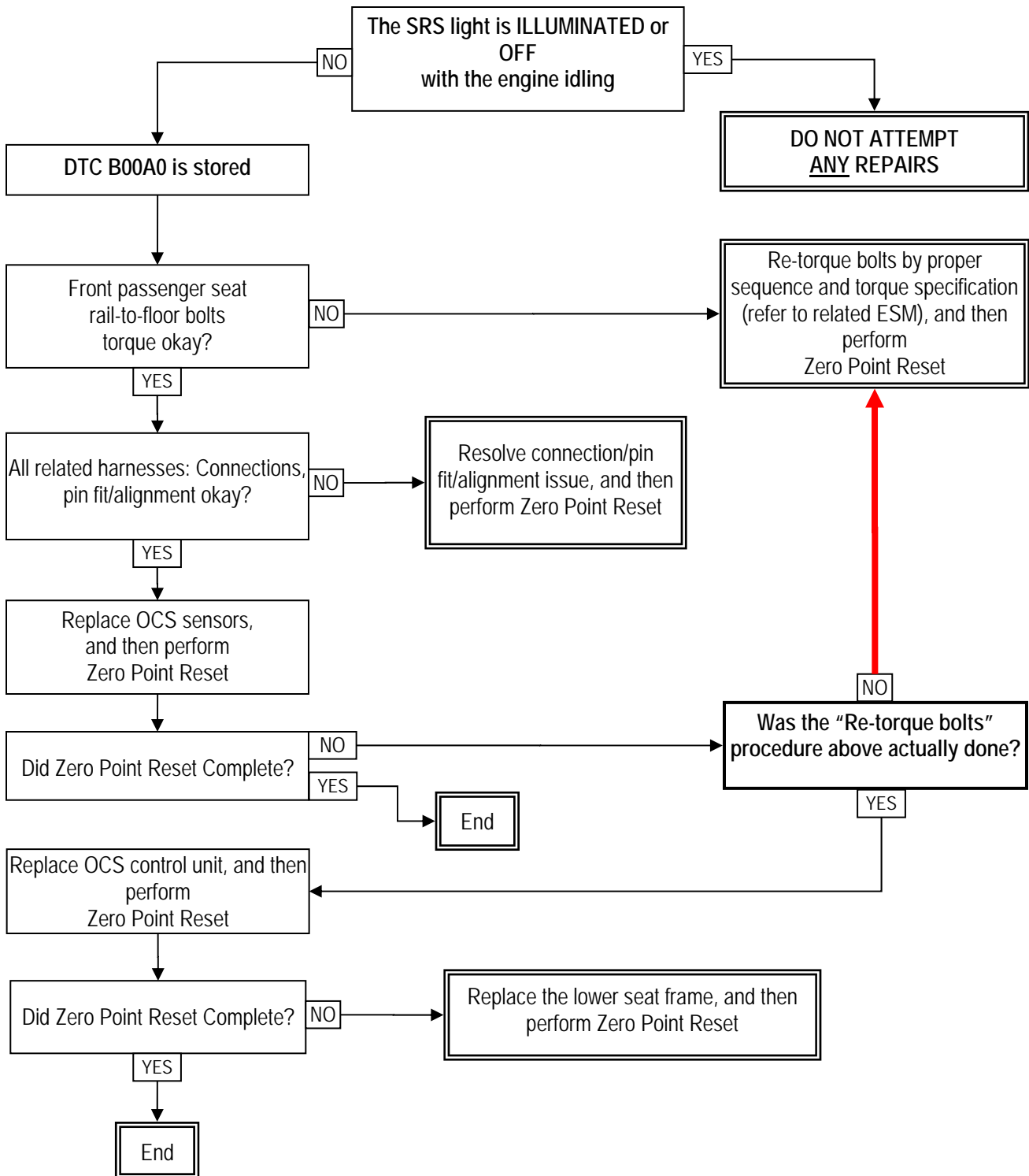


Supplemental Restraint System (SRS) Light Flow Chart

NOTE: This flow chart applies to SRS DTC B00A0 only. For all other SRS DTCs, refer to the appropriate ESM.







Example of SRS light








TROUBLESHOOTING


If you think the PABI light () is incorrect:



1. **If the PABI light () is ON (illuminated) without a front seat passenger and no object(s) on the front passenger seat:**
 - Conditions that may cause the PABI light () to illuminate:
 - An object weighing over 2.2 lbs. (1 kg) hanging on the front passenger seat or placed in the seatback pocket
 - A child seat or other object pressing against the rear of the seatback
 - A rear passenger pushing or pulling on the back of the front passenger seat
 - The front seat or seatback forced back against an object on the seat or floor behind it
 - An object placed under the front passenger seat
 - An object placed between the center console and front passenger seat cushion or between the door and front passenger seat cushion

If the vehicle is moving, come to a stop when it is safe. Check and correct any of the above conditions. Restart the vehicle, and then wait one minute (**NOTE:** A system check will be performed during which the PABI light () will remain ON (illuminated) for about 7 seconds). If the PABI light () is still ON (illuminated) after the system check, the vehicle should be inspected by an Infiniti dealer as soon as possible.

2. **If the PABI light () is ON (illuminated) with an adult occupying the front passenger seat:**
 - The occupant is a small adult → The PABI light () is functioning as intended. The front passenger air bag is suppressed.
 - If the occupant is not a small adult, conditions that may cause the PABI light () to illuminate:
 - The occupant is not sitting upright, leaning against the seat back, and centered on the seat cushion with feet comfortably extended to the floor.
 - A child seat or other object is pressing against the rear of the seatback.
 - A rear passenger is pushing or pulling on the back of the front passenger seat.
 - The front seat or seatback is forced back against an object on the rear seat or floor behind it.
 - An object is placed under the front passenger seat.
 - An object is placed between the center console and front passenger seat cushion or between the door and front passenger seat cushion.

If the vehicle is moving, come to a stop when it is safe. Check and correct any of the above conditions. Restart the vehicle, and then wait one minute (**NOTE:** A system check will be performed during which the PABI light () will remain ON (illuminated) for about 7 seconds). If the PABI light () is still ON (illuminated) after the system check, the person should be advised not to ride in the front passenger seat and the vehicle should be inspected by an Infiniti dealer as soon as possible.

3. If the PABI light () is OFF (dark) with a small adult, child, or child restraint occupying the front passenger seat:
- This may be due to the weight sensors detecting one or more of the following loading conditions:
 - A small adult or child is not sitting upright, leaning against the front passenger seatback, and centered on the front passenger seat cushion with feet comfortably extended to the floor.
 - The child restraint is not properly installed, as outlined in the Safety section (section 1) of the Owner's Manual.
 - An object weighing over 2.2 lbs. (1 kg) is hanging on the front passenger seat or placed in the front passenger seatback pocket.
 - A child seat or other object is pressing against the rear of the front passenger seatback.
 - A rear passenger is pushing or pulling on the back of the front passenger seat.
 - The front passenger seat or seatback is forced back against an object on the rear seat or floor behind it.
 - An object is placed under the front passenger seat.
 - An object is placed between the center console and front passenger seat cushion or between the door and front passenger seat cushion.

If the vehicle is moving, come to a stop when it is safe. Check and correct any of the above conditions. Restart the vehicle, and then wait one minute (**NOTE:** A system check will be performed during which the PABI light () will remain ON (illuminated) for about 7 seconds). If the PABI light () is still OFF (dark) after the system check, the small adult, child, or child restraint should be repositioned in the rear seat and the vehicle should be inspected by an Infiniti dealer as soon as possible.



Appendix


Customer Information for OCS Operation

NOTE:

- If the OCS system is confirmed to be operating as designed or if the customer has additional questions, provide the customer with the information below:
- It is important to understand how the system operates. Section 1 of the Owner's Manual has a detailed description of how the occupant classification system is designed to operate in accordance with federal regulations. The issues being described may indicate normal operation, depending on the size of the front passenger seat occupant. We urge the customer to read that section of the Owner's Manual first. Then, if they still believe there is an issue, have them bring/return the vehicle to the dealership for diagnosis by a trained service technician.

NORMAL OPERATION

In order for the OCS to classify the right front passenger based on weight, follow the precautions and steps outlined below (with the vehicle parked and engine idling):

1. Adjust the seat as outlined in the Safety section (section 1) of the Owner's Manual. Sit upright, leaning against the seat back, and centered on the seat cushion with your feet comfortably extended to the floor.
2. Fasten the seat belt as outlined in the Safety section (section 1) of the Owner's Manual.
3. Remain in this position for 30 seconds or until the PABI light signals that the system has properly classified the seat occupant.
4. Ensure proper classification by checking the PABI light ().
5. Remember that the PABI light may remain illuminated if the front passenger seat is occupied by a small statured adult. Federal regulations require that the air bag be suppressed if the OCS determines that the seat is occupied by someone who does not meet the size threshold set by the U.S. government.

PRECAUTIONS

- Make sure there are no objects: On the occupant's lap; placed between the center console and front passenger seat cushion; placed between the door and front passenger seat cushion.
- Make sure there are no objects weighing over 2.2 lbs. (1 kg) hanging on the seat or placed in the seatback pocket.
- Make sure that a child seat or other object is not pressing against the rear of the seatback.
- Make sure that a rear passenger is not pushing or pulling on the back of the front passenger seat.
- Make sure that the front seat or seatback is not forced back against an object on the seat or floor behind it.
- Make sure there is no object(s) placed under the front passenger seat.

NOTE: This vehicle's OCS locks the classification during driving, so it is important to confirm the passenger is properly classified prior to driving. Also, the OCS may recalculate the weight of the occupant when the vehicle comes to a stop, so front passenger seat occupants should continue to remain seated as outlined above.