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1999 LEXUS IS OEM Service and Repair Workshop Manual

Go to manual page

Last Modified: 10-07-2024	6.11:8.1.0	**Doc ID:** RM100000002HA2K
Model Year Start: 2024	**Model:** GX550	**Prod Date Range:** [12/2023 -]
Title: SUPPLEMENTAL RESTRAINT SYSTEMS: OCCUPANT CLASSIFICATION SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING; 2024 MY GX550 [12/2023 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

CAUTION / NOTICE / HINT

HINT:

- Use the following procedure to troubleshoot the occupant classification system.
- *: Use the GTS.

PROCEDURE

1.	VEHICLE BROUGHT TO WORKSHOP

NEXT
▼

2.	CUSTOMER PROBLEM ANALYSIS

(a) Confirm problem symptoms.

Click here INFO

NEXT
▼

3.	INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage.

Standard voltage:
11 to 14 V

HINT:

- A simple method to determine whether the battery is discharged is to operate the horn.
- If the voltage is below 11 V, recharge or replace the battery before proceeding.

(b) Check the fuses and relays.

(c) Check the connector connections and terminals to make sure that there are no abnormalities such as loose connections, deformation, etc.

NEXT
▼

4.	CHECK CAN COMMUNICATION SYSTEM*

Make sure to record any output Freeze Frame Data and Vehicle Control History (RoB) codes before clearing them and checking for DTCs again.

(a) Clear the DTCs.

Body Electrical > SRS Airbag > Clear DTCs

NEXT
▼

| 8. | **CHECK DTC*** |

(a) Check for DTCs.

Body Electrical > SRS Airbag > Trouble Codes

HINT:
  Record or print DTCs if necessary.

OK:
DTCs are not output.

NG ▶ **GO TO DIAGNOSTIC TROUBLE CODE CHART**

OK
▼

| 9. | **CHECK FOR VEHICLE CONTROL HISTORY (RoB)*** |

(a) Check for vehicle control history (RoB).

Click here **INFO**

Body Electrical > SRS Airbag > Utility

TESTER DISPLAY
Vehicle Control History (RoB)

RESULT	PROCEED TO
Vehicle control history (RoB) is not output	A
Vehicle control history (RoB) is output	B

A ▶ **GO TO PROBLEM SYMPTOMS TABLE**

B
▼

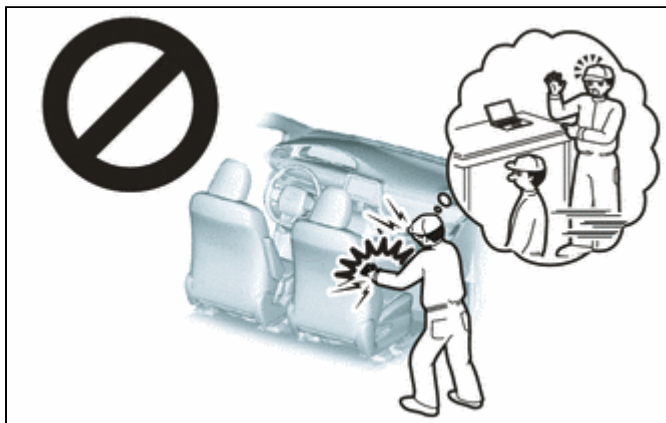| 10. | **CLEAR VEHICLE CONTROL HISTORY (RoB)*** |

NOTICE:

Last Modified: 10-07-2024	6.11:8.1.0	**Doc ID:** RM100000002HA2L
Model Year Start: 2024	**Model:** GX550	**Prod Date Range:** [12/2023 -]
Title: SUPPLEMENTAL RESTRAINT SYSTEMS: OCCUPANT CLASSIFICATION SYSTEM: OPERATION CHECK; 2024 MY GX550 [12/2023 -]			

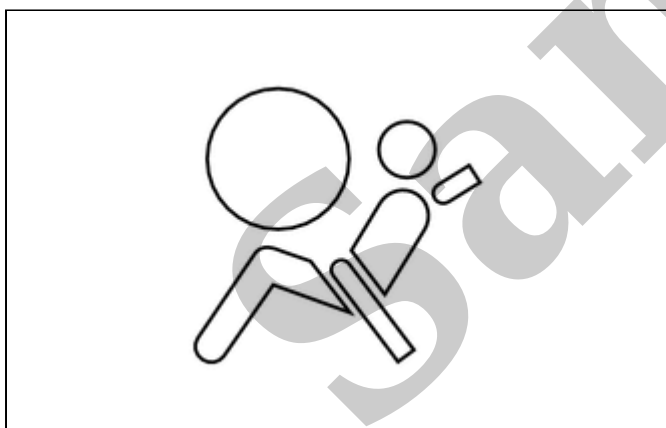# OPERATION CHECK

PRECAUTION FOR OPERATION CHECK

CAUTION:

Use the correct procedure to replace the airbag parts.

CHECK SRS WARNING LIGHT

(a) Primary check

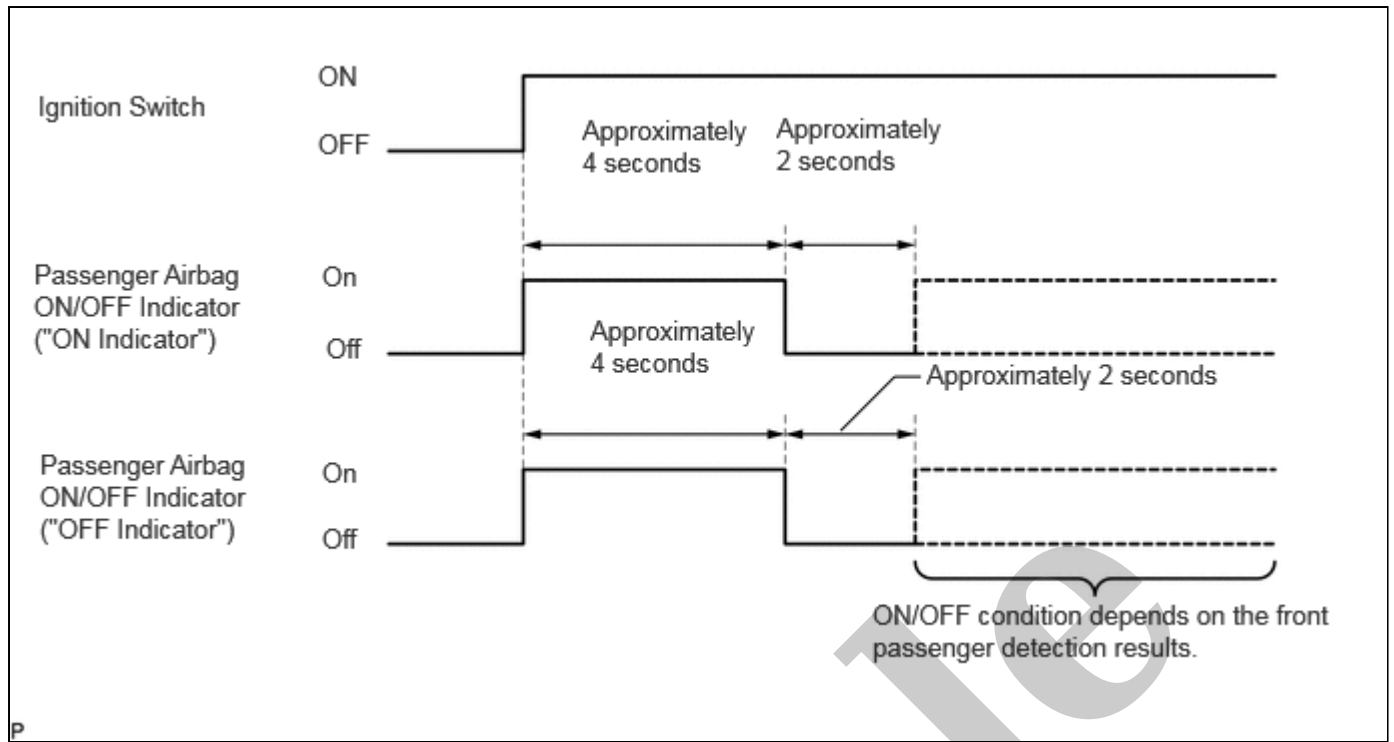(1) Turn the ignition switch to ON and check that the SRS warning light turns on.

(2) Turn the ignition switch off. Wait at least 2 seconds, and then turn the ignition switch to ON. The SRS warning light comes on for approximately 6 seconds and diagnosis of the airbag system (including the seat belt pretensioners) is performed.

NOTICE:

Turn the ignition switch off when the battery is connected.

HINT:

- If the warning light remains on for approximately 6 seconds or more after the ignition switch has been turned to ON, there may be a malfunction with the SRS airbag system.
- If the warning light occasionally turns on approximately 6 seconds or more after the ignition switch has been turned to ON, there may be a short to +B, short to ground or an open in the SRS warning light circuit.
- If the warning light illuminates after turning the ignition switch off or ACC, there may be a malfunction in the power source circuit or combination meter assembly.
- The SRS warning light turns off, and then turns on. This blinking pattern indicates a source voltage drop. The SRS warning light turns off 6 to 10 seconds after the source voltage returns to normal.

(2) Adjust the seat position according to the table below.

ADJUSTMENT ITEM	POSITION
Slide Direction	Rearmost position
Headrest Height	Lowest position
Recline Angle	Upright position

(3) Perform zero point calibration by following the prompts on the GTS screen.

Body Electrical > SRS Airbag > Utility

TESTER DISPLAY
Occupant Detection Sensor Zero Point Calibration

OK:
"Occupant Detection Sensor Zero Point Calibration is complete." is displayed.

(4) Clear the Vehicle Control History (RoB).

Body Electrical > SRS Airbag > Utility

TESTER DISPLAY
Vehicle Control History (RoB)

(5) Check for Vehicle Control History (RoB).

Body Electrical > SRS Airbag > Utility

TESTER DISPLAY
Vehicle Control History (RoB)

OK:
X20D0 is not output.

HINT:
- Refer to the GTS operator's manual for further details.
- If Occupant Detection Sensor Zero Point Calibration does not complete normally, check the Error Code List to determine the cause of malfunction.

Error Code Chart

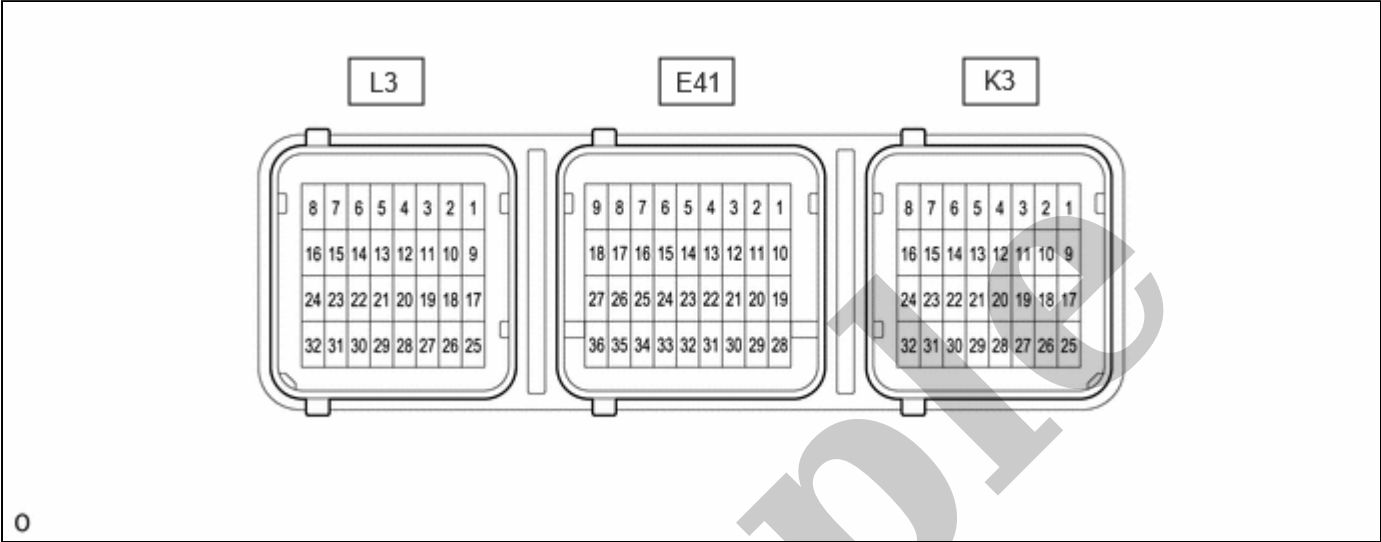| ERROR CODE	ITEM NAME	CAUSE	COUNTERMEASURE
		○ The sensor load value after learning is not as specified (below lower limit)	[INFO] 3. Perform Occupant Detection Sensor Zero Point Calibration again **HINT:** If the error code is output again, replace the front seat adjuster assembly RH (occupant classification sensor). [INFO]
10	Nonvolatile Memory Storage Failure	**When a memory malfunction caused by either of the following is detected:** ○ Writing failure ○ IGR low voltage (below 8 V)	**Perform the following** 1. Check for DTCs 2. Check vehicle control history (RoB) [INFO] 3. Measure IGR terminal voltage [INFO] **HINT:** If below 8 V, check the power source circuit. 4. Perform Occupant Detection Sensor Zero Point Calibration again **HINT:** If the error code is output again, replace the airbag ECU assembly. [INFO]
11	Zero Point Learning Timeout	Occupant Detection Sensor Zero Point Calibration does not complete within 2 seconds (within the specified number of seconds)	**Perform the following** 1. Clear the vehicle control history (RoB) [INFO] 2. Check vehicle control history (RoB) [INFO] 3. Check whether the vehicle and seat are subject to vibration or a load 4. Check front seat assembly RH installation [INFO] 5. Perform Occupant Detection Sensor Zero Point Calibration again **HINT:** If the error code is output again, replace the airbag ECU assembly. [INFO]
13	FI Load Sensor Malfunction	When a load sensor malfunction is detected	**Perform the following** 1. Check for DTCs 2. Perform Occupant Detection Sensor Zero Point Calibration again **HINT:**

ERROR CODE	ITEM NAME	CAUSE	COUNTERMEASURE
			INFO 2. Measure IGR terminal voltage **INFO** **HINT:** 　When IGR low voltage (8 V or 16 V or higher) is detected
23	Load Unstable	**When any of the following conditions is detected:** ○ The vehicle and seat are subject to vibration or a load ○ Sensor malfunction	**Perform the following** 1. Check whether the vehicle and seat are subject to vibration or a load 2. Perform Occupant Detection Sensor Zero Point Calibration again **HINT:** 　If the error code is output again, replace the front seat adjuster assembly RH (occupant classification sensor). **INFO**

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TERMINALS OF ECU

AIRBAG ECU ASSEMBLY

TERMINAL NO.	TERMINAL SYMBOL	DESTINATION
E41-32	E2	Ground
E41-33	E1	Ground
E41-34	P-AB	Map light assembly (passenger airbag ON/OFF indicator)
E41-35	PAON	Map light assembly (passenger airbag ON/OFF indicator)
E41-36	IGR	A/BAG-IGR fuse
K3-18	GNDR	Front seat inner belt assembly RH
K3-27	RBE+	Front seat inner belt assembly RH
K3-24	SVC	Front seat adjuster assembly RH (occupant classification sensor)
K3-31	SGD	Front seat adjuster assembly RH (occupant classification sensor)
K3-32	SIG	Front seat adjuster assembly RH (occupant classification sensor)

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FAIL-SAFE CHART

FAIL-SAFE FUNCTION

(a) The following chart shows the status of the front passenger SRS items and passenger airbag ON/OFF indicator operation under failure condition.

PASSENGER AIRBAG ON/OFF INDICATOR		FRONT PASSENGER SRS ITEM					
ON INDICATOR	OFF INDICATOR	INSTRUMENT PANEL PASSENGER AIRBAG ASSEMBLY	LOWER NO. 2 INSTRUMENT PANEL AIRBAG ASSEMBLY	FRONT SEAT CUSHION AIRBAG ASSEMBLY	FRONT SEAT AIRBAG ASSEMBLY RH	CURTAIN SHIELD AIRBAG ASSEMBLY RH	FRONT SEAT OUTER BELT ASSEMBLY RH
OFF	ON	X	X	X	○	○	○

○: Deployable
X: Not deployable