

# **TECHNICAL INSTRUCTIONS**

**FOR**

**SAFETY RECALL - 23TA15**

**PASSENGER AIRBAG MAY NOT DEPLOY**

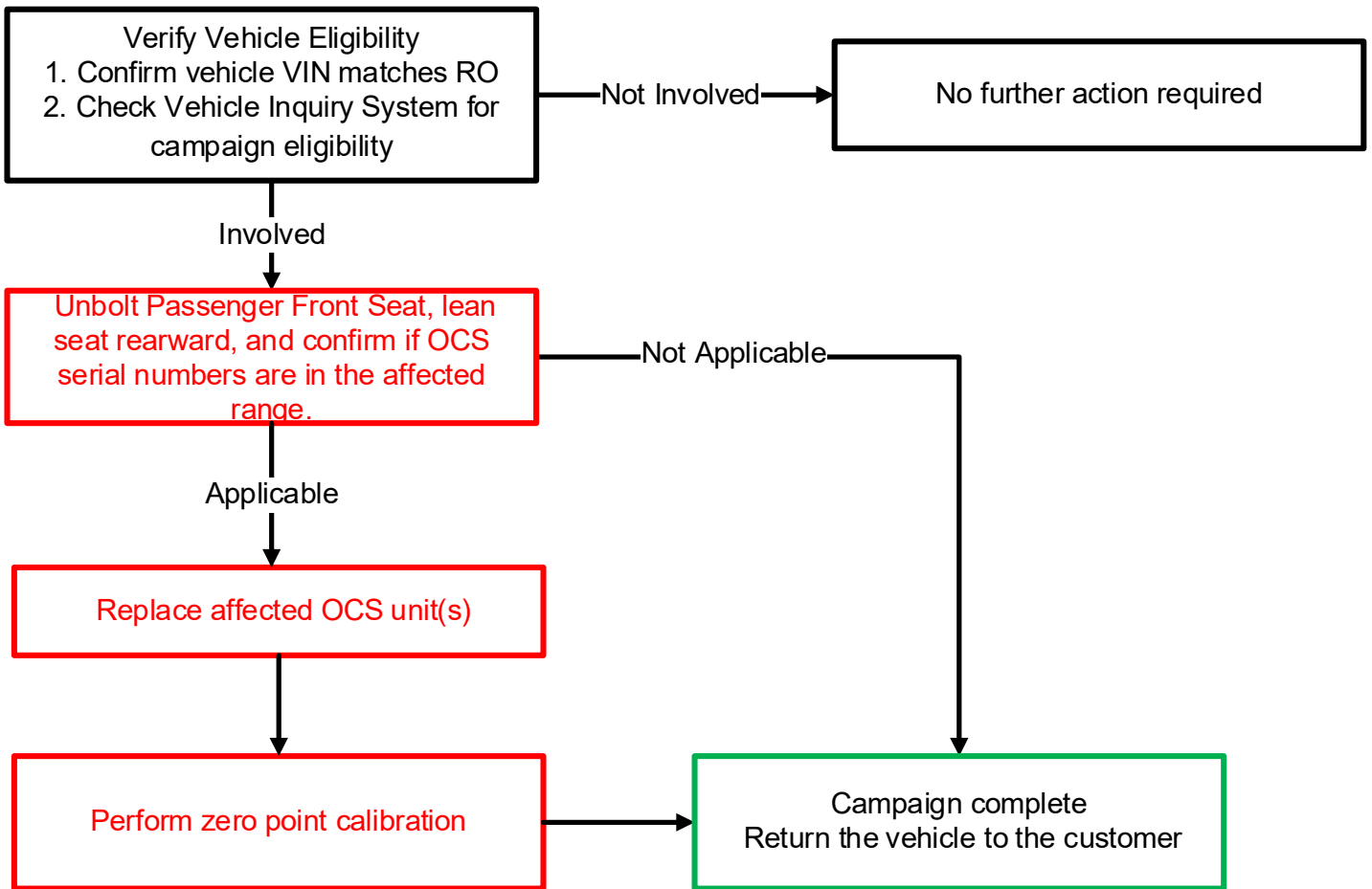
**CERTAIN 2020-2022 HIGHLANDER, HIGHLANDER HV, RAV4, RAV4 HV,  
SIENNA HV VEHICLES**

The repair quality of covered vehicles is extremely important to Toyota. All dealership technicians performing this repair are required to complete the most current version of the E-Learning course “Safety Recall and Service Campaign Essentials”. To ensure that all vehicles have the repair performed correctly, technicians performing this recall repair are required to have completed all of the following courses currently:

- **TIC206A – Electrical Repair**

Always check which technicians can perform the repair by logging on to <https://www.uotdealerreports.com>. The dealership is responsible for selecting technicians who have completed the above courses to perform this repair. Carefully review your resources, the technician’s skill level, and ability before assigning technicians to this repair. It is important to consider technician days off and vacation schedules to ensure properly trained technicians are available to perform this repair at all times.

## I. OPERATION FLOW CHART



## II. IDENTIFICATION OF AFFECTED VEHICLES

### 1. CHECK VEHICLE FOR CAMPAIGN ELIGIBILITY

- Compare the vehicle's VIN to the VIN listed on the Repair Order to ensure they match.
- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Campaign and that it has not already been completed.

#### NOTICE:

**TMNA warranty will not reimburse dealers for repairs completed on vehicles that are not affected or were previously completed, even by another dealer.**

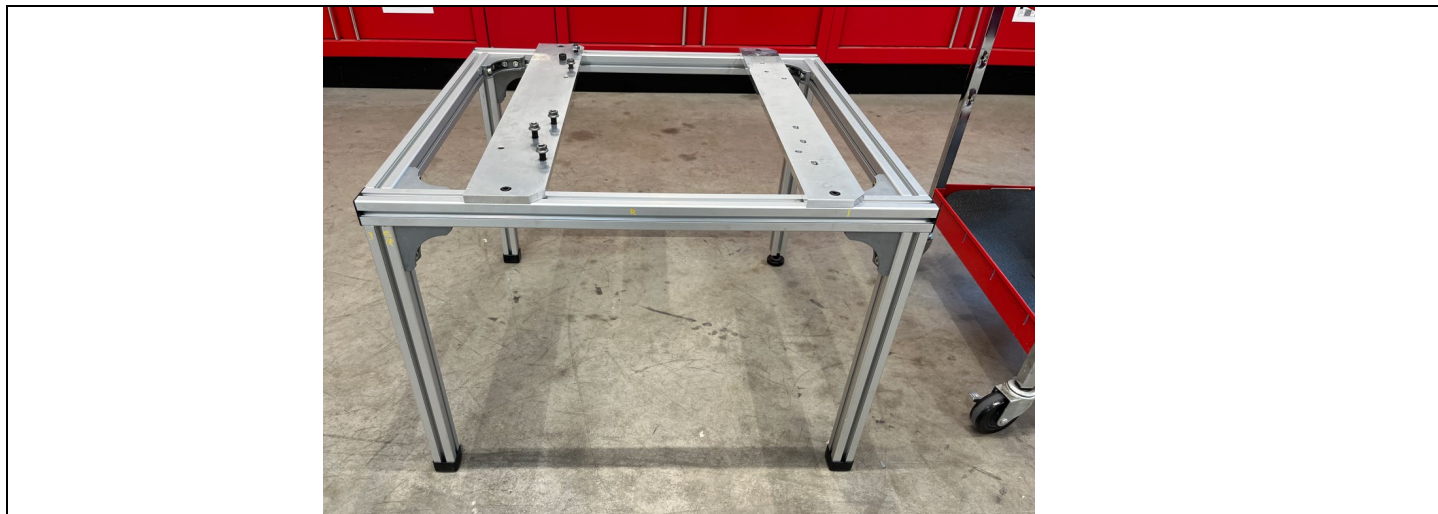
## III. PREPARATION

### A. TOOLS AND EQUIPMENT

Standard Hand Tools	Techstream/GTS+	T50 "TORX" Socket
Torque Wrench	Flashlight	Masking Tape
Inspection Application	Protective Cover	
3.5-4.5" Spacer (foam block, wood block or equivalent)	SST 14mm Torque Adapter (100mm/150mm)	SST 12mm Torque Adapter (100mm/150mm)
6" 3/8 Extension		

#### NOTICE:

- Recall SST: Seat Jig Assembly (This was shipped to your dealer at Phase 1 Remedy Launch).**
- It is critical that the seat jig assembly is used during sensor replacement, so the seat tracks remain square and do not become misaligned. Seat track out of alignment will impact the occupant detection weight readings by the ECU.**



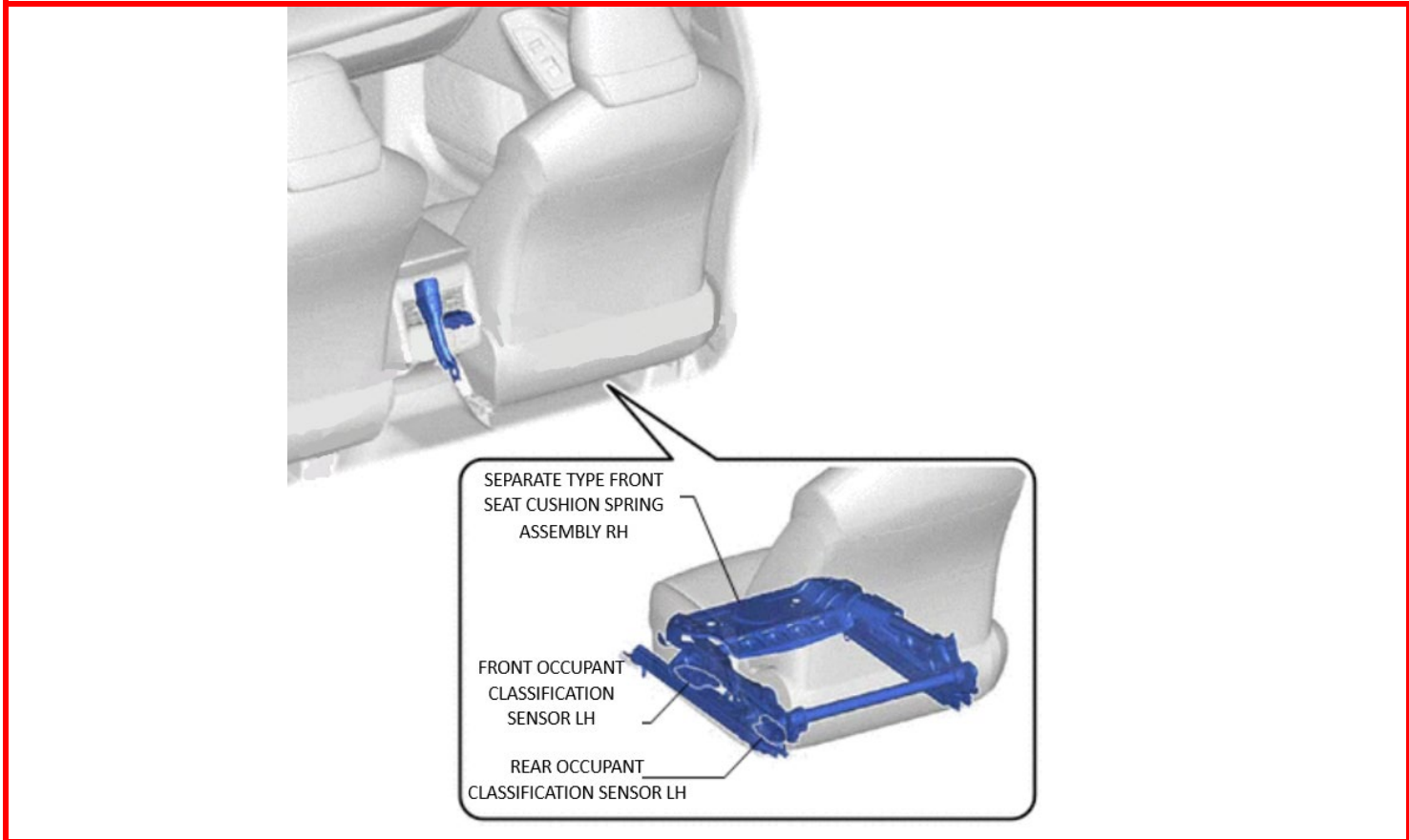
### B. PARTS

Part Number	Part Description	Quantity
04003-60106	SENSOR SUB-ASSY, WEIGHT DETECTOR, FR	As Needed
04003-60206	SENSOR SUB-ASSY, WEIGHT DETECTOR, RR	As Needed

#### IV. WORK PROCEDURE TABLE OF CONTENTS

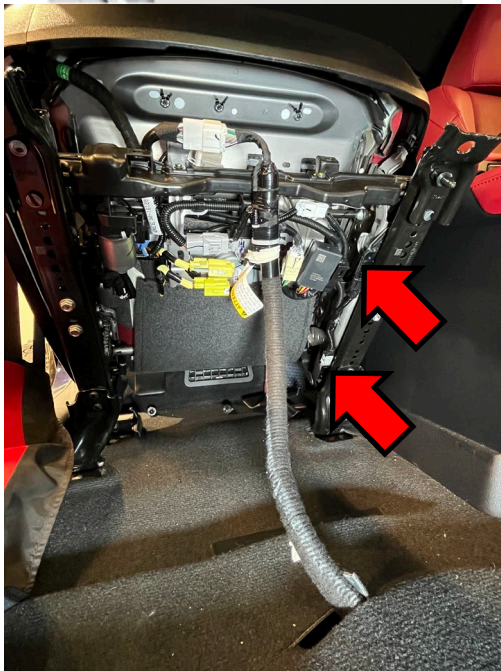
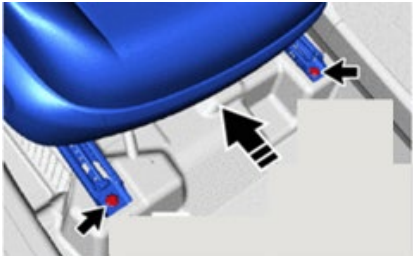
REMOVE PASSENGER FRONT SEAT AND INSPECT OCS SERIAL NUMBERS.....	SECTION VI.
REPLACE FRONT AND/OR REAR OCS ASSEMBLIES .....	SECTION VII.
CALIBRATION AND CONFIRMATION .....	SECTION VIII.
APPENDIX .....	SECTION IX.

#### V. BACKGROUND



## VI. INSPECT FRONT AND REAR OCS SERIAL NUMBERS

**NOTE: Manual seat track assembly will follow the same inspection instructions.**



### 1. UNBOLT THE PASSENGER FRONT SEAT AND CONFIRM OCS SERIAL NUMBERS

- a) Install the mobile inspection app on your Apple device using the QR code or by clicking on the link below:  
<https://apps.apple.com/us/app/qdamobile/id1640292519>

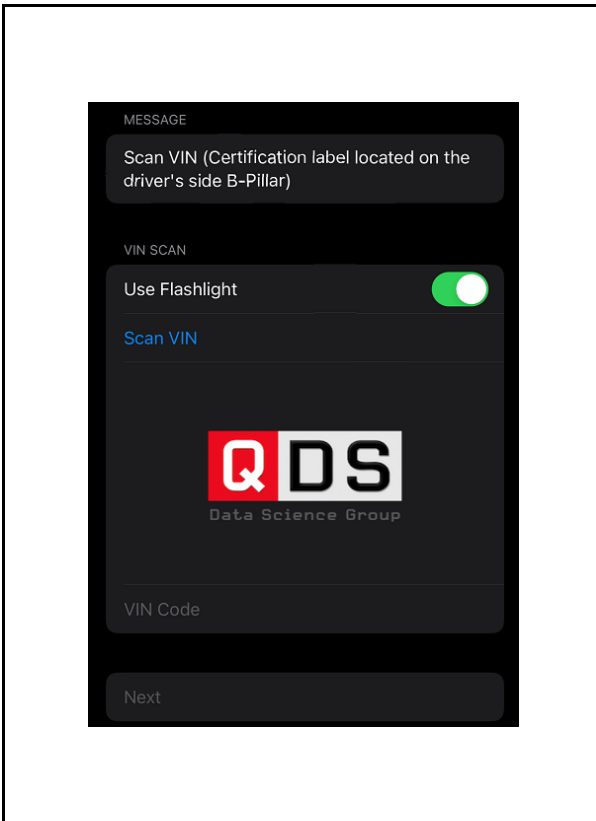
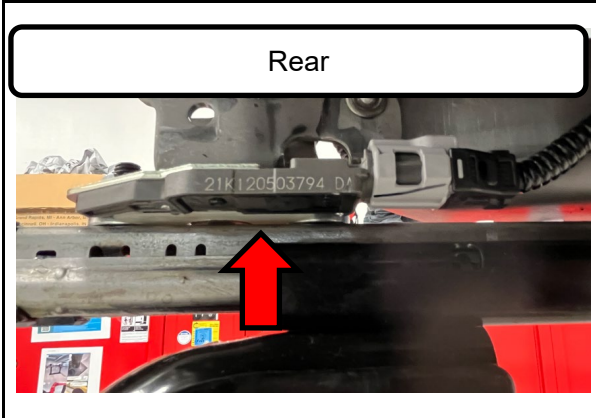
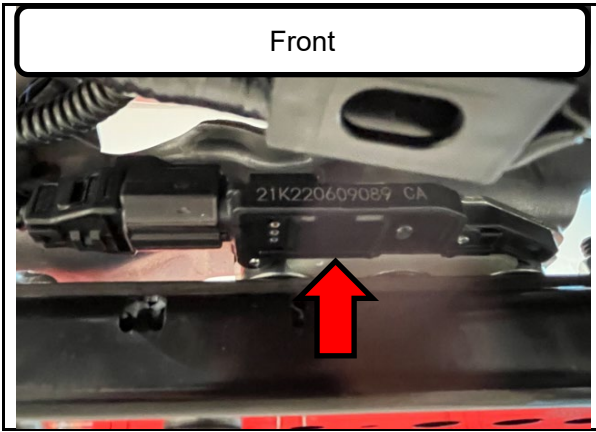
**NOTE:**

**At launch, the inspection app will only be available for Apple devices. TMNA is working on an Android inspection app as well and anticipates it will be available in the first quarter of 2025.**

- b) Take note of the passenger seat position, so seat can be returned to this position later.
- c) Place the passenger front seat in the following positions before unbolting:
- Recline Angle - Upright Position
  - Front Tilt Height – Highest Position
  - Seat Lifter Height – Highest Position
- d) Using a T50 “TORX” socket, unbolt the 4 passenger seat bolts.
- e) Lean the passenger front seat back to view the underside of the seat.



**DO NOT disconnect any seat harness connectors at this time.**



## 2. IDENTIFY THE FRONT AND REAR OCS ASSEMBLY SERIAL NUMBERS

- Viewing from underneath the seat, locate and identify the front and rear OCSs.

- Follow the instructions in the mobile inspection application to scan the VIN and both the front and rear OCS serial numbers.

### Do the front and/or rear OCS units require replacement?

**YES:** Front and/or rear OCS require replacement; proceed to **Section VII**.

**NO:** Proceed to **step 3**.



**If the first 5 digits of the OCS serial number are illegible, the sensor must be replaced.**

### NOTE:

**In the event that the application cannot successfully scan the vinyl VIN certification label due to its compromised condition or if it is missing, please reach out to the Quality Compliance team at [quality\\_compliance@toyota.com](mailto:quality_compliance@toyota.com). Include a photograph of the damaged VIN label, if applicable, as well as the VIN label located beneath the windshield in your correspondence.**



### 3. REINSTALL PASSENGER FRONT SEAT

- a) Install the passenger front seat following the repair manual steps:
- [Highlander](#)
  - [RAV4 \(Manual\)](#)
  - [RAV4 \(Power\)](#)
  - [Sienna HV](#)

**NOTE:**

Be sure to tighten the bolts in the order shown in the repair manual.

### 4. RESTORE FRONT PASSENGER SEAT TO ORIGINAL POSITION

### 5. CAMPAIGN COMPLETE

## VII. REPLACE FRONT AND/OR REAR OCS ASSEMBLIES

### HINT:

Perform this procedure only when OCS replacement has been determined in the previous section.



### 1. REMOVE PASSENGER FRONT SEAT ASSEMBLY



**For powered seats, set the seat position forward to allow rear seat track bolts to be accessible for mounting to jig assembly in the following steps.**

a) Remove the passenger front seat following the repair manual steps:

- [Highlander](#) (Steps 4-9 only)
- [RAV4 \(Manual\)](#) (Steps 1-10(f) only)
- [RAV4 \(Power\)](#) (Steps 5-10(f) only)
- [Sienna HV](#) (Steps 3-8(a)(4) only)

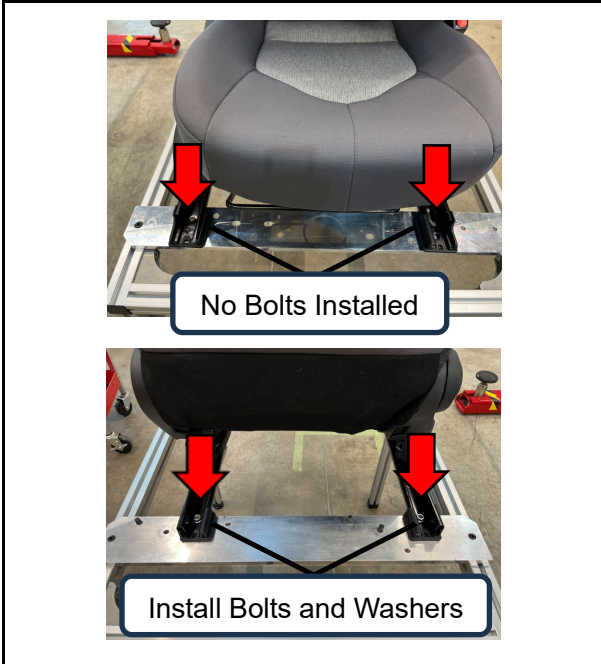
### 2. PREPARE THE JIG ASSEMBLY

a) Identify the correct rear bolt and front alignment pinhole combination to match the seat frame type being mounted to the jig.



### HINT:

Be sure to position the jig in a safe location clear of any moving vehicles or machinery.



### 3. INSTALL SEAT ASSEMBLY TO THE JIG

- a) Place the passenger front seat assembly onto the jig and secure it using the 2 provided bolts, nuts, and washers through the rear seat track mounting holes.

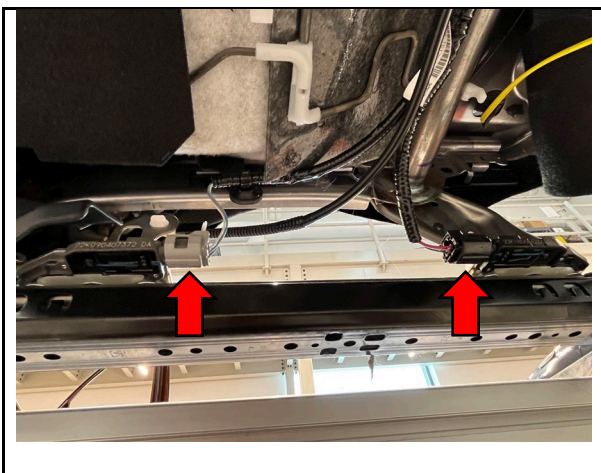
**Torque: 27 N\*m (20 ft.\*lbf)**

**NOTICE:**

**Wear protective gloves. Sharp areas on the seat track parts may injure your hands.**



- b) Ensure seat is properly secured to the jig.



### 4. DISCONNECT THE OCS CONNECTORS

- a) Disconnect the front and rear OCS connectors.

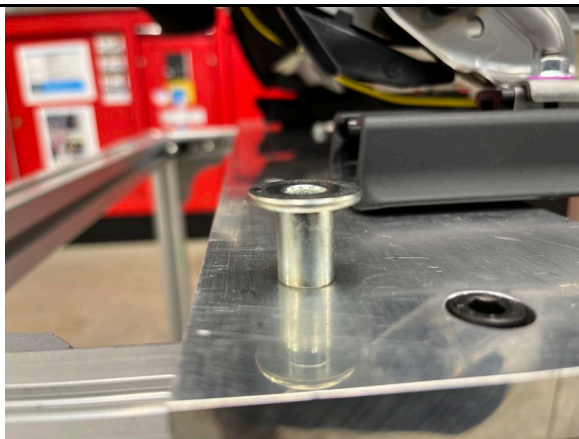
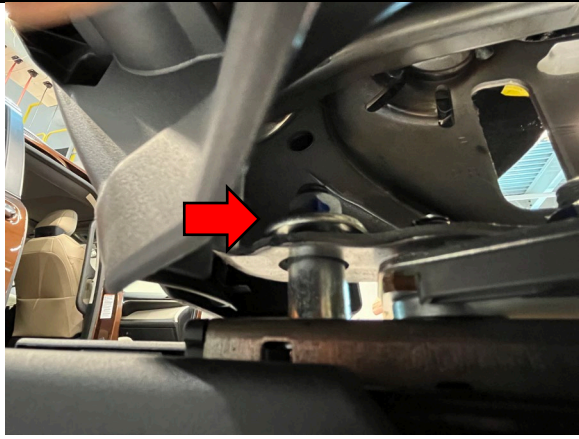
**NOTICE:**

**Be sure to disconnect both front and rear OCS connectors before lifting up the seat track in the following steps.**

## 5. REMOVE LEFT REAR SEAT TRACK INTERFERENCE NUT



**DO NOT** loosen any nuts other than the ones instructed.



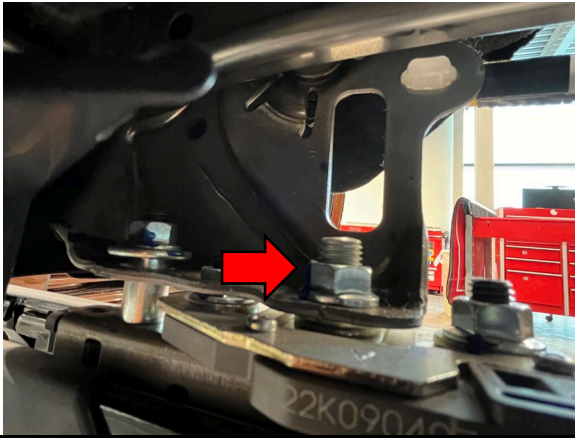
- a) Loosen and remove the rear interference seat track nut using the SST 12mm Torque Adapter in either the 100mm or 150mm setting, with a 6" extension and ratcheting wrench.

- b) Remove the interference nut sleeve and place it in a safe location for later use.

## 6. REMOVE LEFT REAR SEAT TRACK NUT



**DO NOT** loosen any nuts other than the ones instructed.



- a) Loosen and remove the rear seat track nut using the SST 14mm Torque Adapter in either the 100mm or 150mm setting, with a 6" extension and ratcheting wrench.

### **NOTE:**

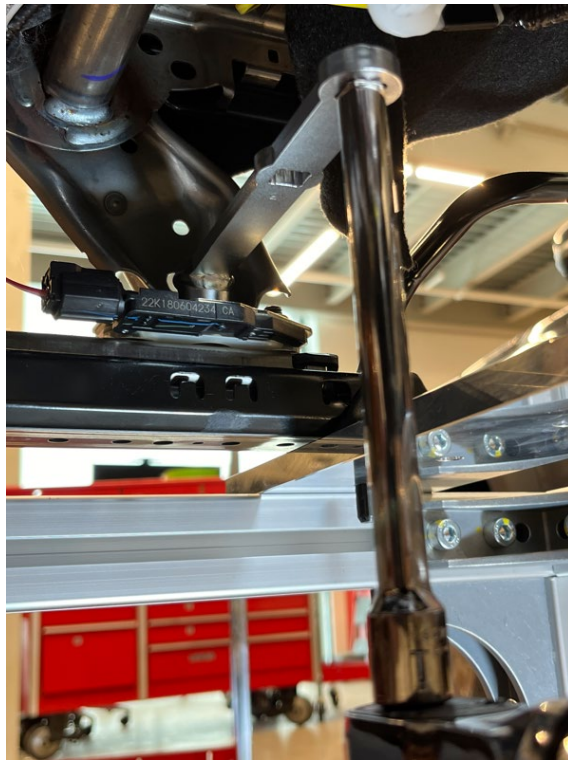
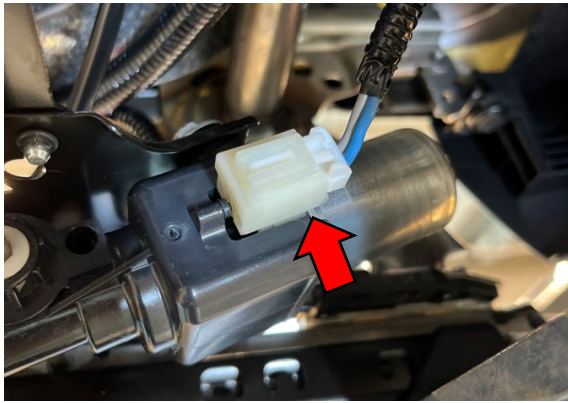
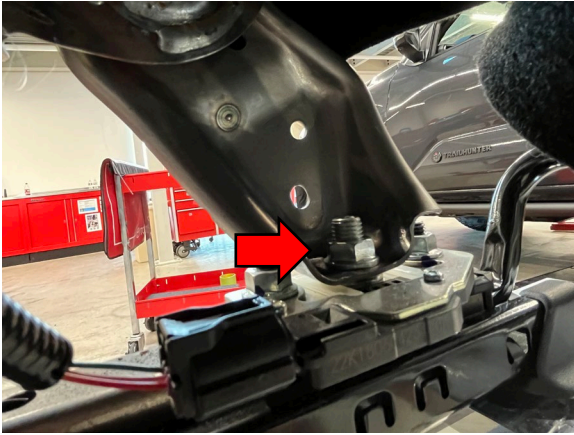
**Be sure to confirm that the rear seat track nut is being removed, not the rear OCS nut.**



## 7. REMOVE LEFT FRONT SEAT TRACK NUT



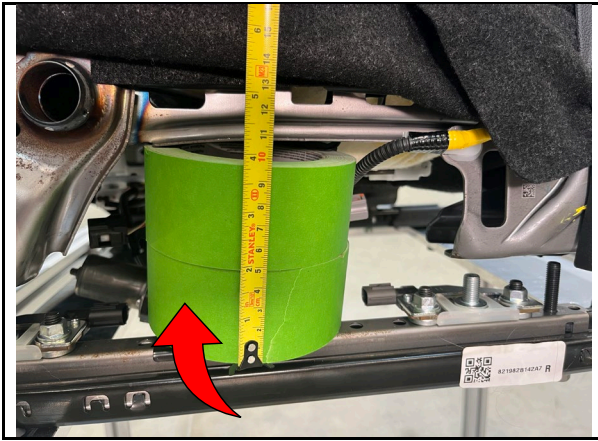
**DO NOT** loosen any nuts other than the ones instructed.



- a) Loosen and remove the front seat track nut using the SST 14mm Torque Adapter in either the 100mm or 150mm setting, with a 6" extension and ratcheting wrench.

### HINT:

For powered seats only, disconnect the front power seat motor connector to allow the removal and installation of the front seat track bolt.



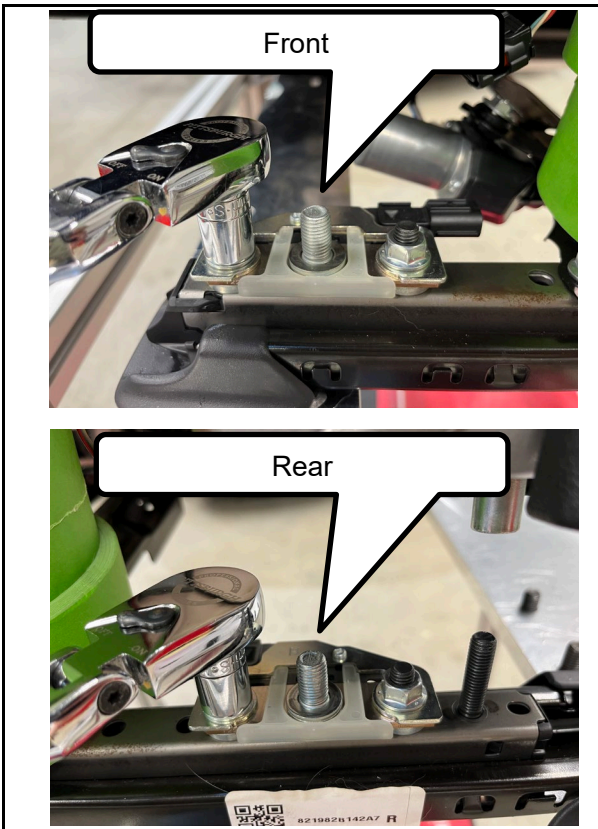
**8. INSTALL A 3.5-4.5" SPACER BETWEEN THE LOWER SEAT TRACK RAIL AND THE UPPER TRACK ASSEMBLY**

**HINT:**

Be sure to use a foam block, tape roll, wood block, or similar to provide enough space to access the front and rear OCS assembly nuts.



**DO NOT** exceed 4.5" of space when inserting tape roll. Damage may occur if this is not followed

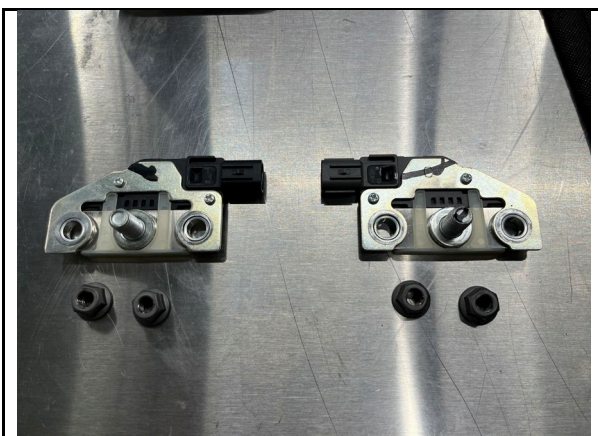


**9. REMOVE OCS(s)**



**DO NOT** loosen any nuts other than the ones instructed.

- a) Using a ratcheting or box wrench, remove the front and/or rear OCS, as instructed by the mobile inspection app.



**10. INSTALL NEW OCS(s) TO THE SEAT TRACK ASSEMBLY**

**NOTICE:**

**Wear protective gloves. Sharp areas on the seat track parts may injure your hands.**



- a) If necessary, install the **NEW** rear OCS to the seat track assembly.

**NOTICE:**

When installing, be sure to use your thumb to gently push on the left corner of each sensor to seat the **NEW** OCS properly.

**Torque: 25 N\*m (18.5 ft.\*lbf)**



- b) If necessary, install the **NEW** front OCS assembly to the seat track assembly.

**NOTICE:**

When installing, be sure to use your thumb to gently push on the left corner of each sensor to seat the **NEW** OCS properly.

**Torque: 25 N\*m (18.5 ft.\*lbf)**



- c) Remove the spacer and place the upper seat assembly back onto the seat track assembly.

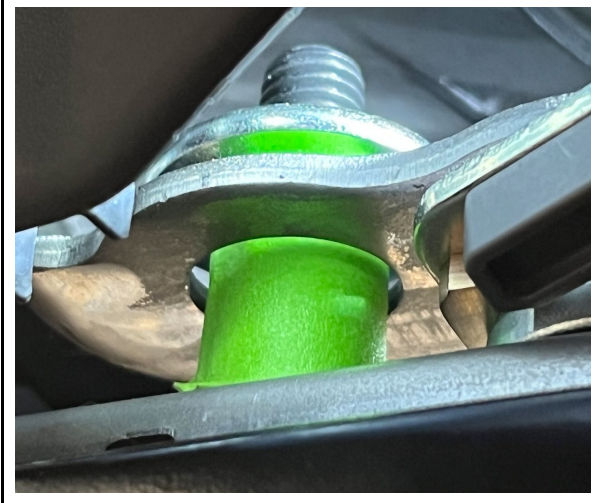


## 11. PREPARE INTERFERENCE SLEEVE

- a) Prepare the interference sleeve for installation by using masking tape. Cut approximately 20mm (3/4") of tape and wrap the interference sleeve **2 times**, ensuring no wrinkles or creases exist.

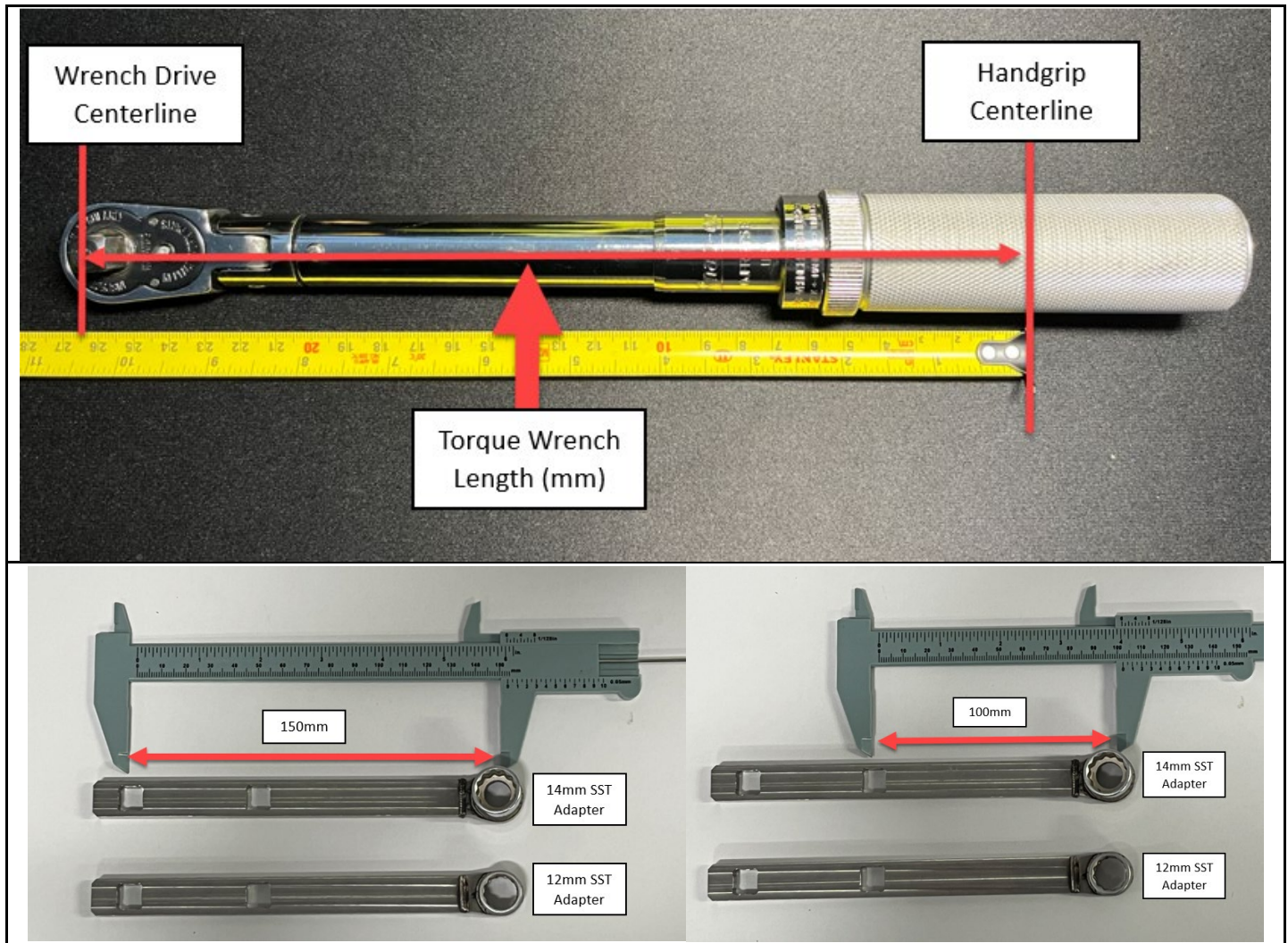
### HINT:

This will ensure that no contact between the sleeve and seat track assembly exists during the installation of the left side seat track nuts.



- b) Temporarily insert the interference sleeve onto the stud.

## 12. CALCULATE TORQUE SPECIFICATION FOR SEAT TRACK NUTS



a) Use the following formula to calculate the torque specification:

**NOTE: The applied torque changes when using the SST adapter. The calculation below will determine the new applied torque specification required for installing the seat track nuts.**

### HINT:

- The measurement that needs to be performed manually is the Torque Wrench Length in millimeters (See illustration above). This is due to the varying sizes of torque wrenches available for use.
- The SST adapter is set to allow for 100mm or 150mm in length (choose either length based on need and enter it into the calculation).
- An extension can be used along with the SST adapter. The extension does not affect the calculated torque specification.

b) Calculation:

- New Torque Value =  $(A / (A+B)) * \text{Original Torque Value}$

A = Torque wrench length (mm) (wrench drive centerline to handgrip centerline)

B = SST adapter length being used (100mm or 150mm)

Original Torque Value = 37 N\*m

HINT: Example:

If:

A = \*270mm \*(variable based on your torque wrench size)

B = \*100mm \*(fixed value for this SST)

Original Torque Value = 37 N\*m

Then:

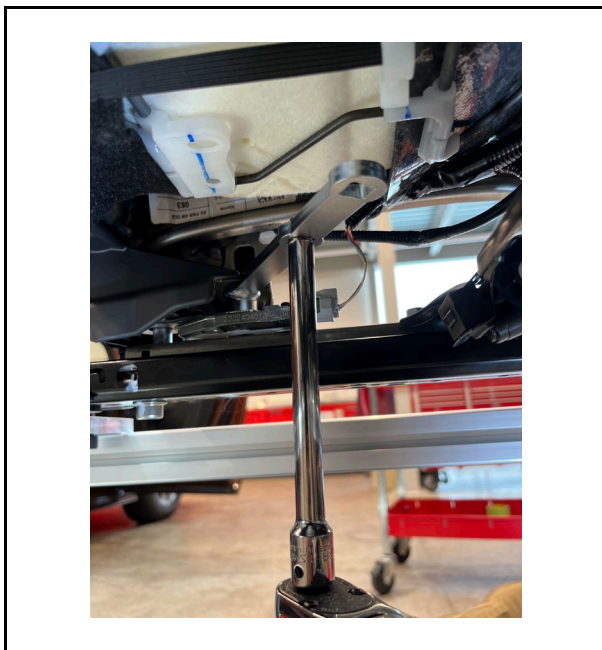
$$\begin{aligned} \text{New Torque Value} &= (270 / (270+100)) * 37 = \\ &= (270 / 370) * 37 = \\ &= 0.730 * 37 = 27 \end{aligned}$$

(Example) New Torque Value = 27 N\*m (20 ft.\*lbf)

### 13. INSTALL THE LEFT SIDE SEAT TRACK BOLTS



- **The interference sleeve MUST NOT touch the seat frame on any side during the following steps.**
- **Confirm that the interference sleeve is free to spin after the torquing of each nut.**
- **If at any point the interference sleeve is no longer free to spin, the left side seat track nuts need to be removed, the seat track adjusted, and the nuts reinstalled.**



- a) Re-install the rear seat track nut and check to ensure interference sleeve is still free to spin. If interference sleeve is not free to spin (making contact with the seat frame), loosen the rear seat track nut, adjust the seat assembly, and repeat this step.

**Original Torque Value: 37 N\*m (27.5 ft.\*lbf)**

**NOTE: The torque adapter MUST remain inline (parallel) with the torque wrench handle while torquing nuts. If torque wrench adapter is not parallel with the torque wrench handle while torquing, the effective length of the tool will be altered, causing torque calculations to be inaccurate.**



- b) Re-install the front seat track nut following the same process as the previous step.

**Original Torque Value: 37 N\*m (27.5 ft.\*lbf)**



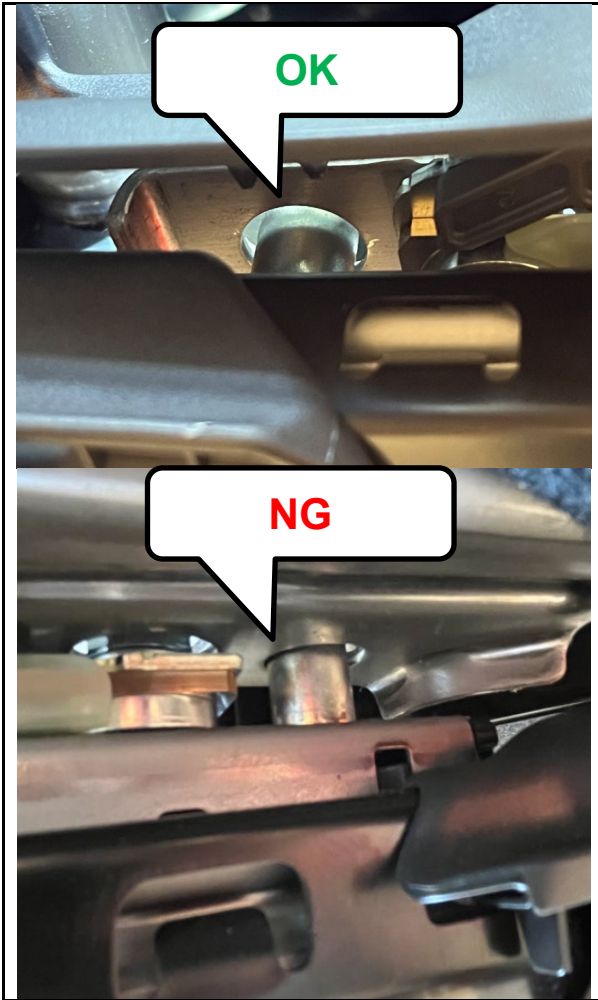
- c) Remove the tape from the interference sleeve and reinstall it to the stud.



- d) Re-install the interference sleeve nut.

**Original Torque Value: 25 N\*m (18 ft.\*lbf)**

**NOTE:**  
**Be sure to recalculate the torque value for this step, as the original torque value has changed.**



- e) Confirm the status of the interference sleeve using a flashlight to shine light in the top side of the interference sleeve.

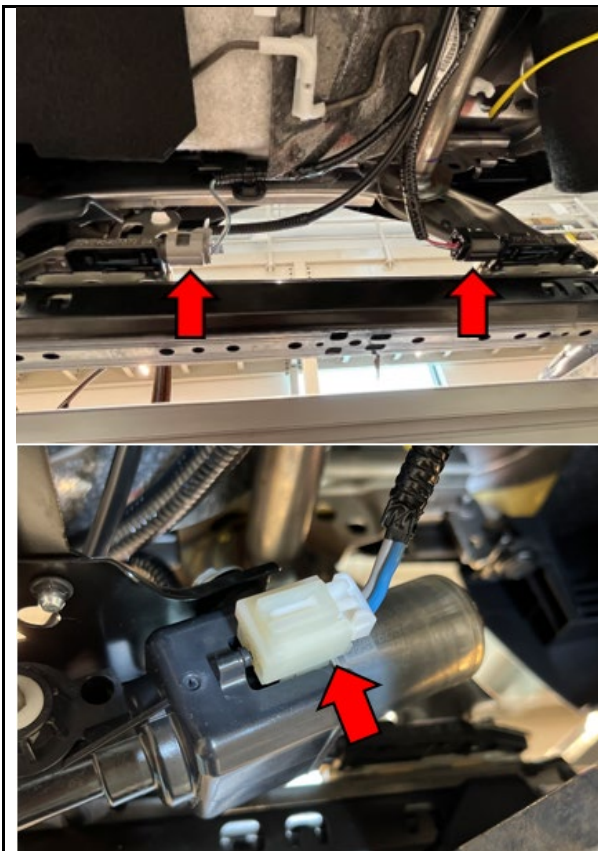
**HINT:**

If no interference exists between the lower seat frame and the spacer, the light can be seen all around. If there is interference, the light cannot be seen.

**Does the interference sleeve touch the seat track on any side?**

**NG:** Remove the left side seat track bolts and repeat the installation steps.

**OK:** Proceed to **step 14**.



**14. RECONNECT BOTH FRONT AND REAR OCS CONNECTORS.**

**NOTE: (Power Seat Only)**  
Reinstall the power seat motor connector removed in the previous step.



#### 15. REMOVE THE SEAT ASSEMBLY FROM THE JIG

- a) Remove the 2 nuts and then remove the seat assembly from the jig.



#### 16. REINSTALL PASSENGER FRONT SEAT

- a) Install the passenger front seat following the repair manual steps:
  - [Highlander](#)
  - [RAV4 \(Manual\)](#)
  - [RAV4 \(Power\)](#)
  - [Sienna HV](#)
- b) Continue to Zero Point Calibration section VIII.

## VIII. CALIBRATION AND CONFIRMATION

### 1. PERFORM ZERO POINT CALIBRATION

Refer to the Repair Manual for instructions on Vehicle Interior / SUPPLEMENTAL RESTRAINT SYSTEMS / OCCUPANT CLASSIFICATION SYSTEM / INITIALIZATION.

- [Highlander](#)
- [RAV4](#)
- [Sienna HV](#)

### 2. PERFORM OCCUPANT CLASSIFICATION SYSTEM – DATA LIST/ACTIVE TEST

Occupant Detection DTC Data List Active Test Utility Dual Data List

STATUS

MONITOR Frame: - Time: - SamplingRate: 167ms Flag Count: -

FL Sensor Weight Information	1.458 lbs	Yaw Rate/G Sensor Assembly Information	Normal Position
RL Sensor Weight Information	1.360 lbs	Passenger Detection(Airbag)	OFF/Child
<b>Total Weight Information</b>	<b>2.818 lbs</b>	Passenger Detection(Belt Warning)	OFF
Weight Forward and Rearward Difference	-0.097 lbs	Driving Status	Stop
Airbag Total Weight	2.818 lbs	Passenger Buckle SW	Unset
Belt Warning Total Weight	2.818 lbs	The Number of DTCs	0
VSC Status	ON		
VSC Vehicle Speed	0.00 MPH		
VSC Zero Point1	0.0718 m/s <sup>2</sup>		
VSC Zero Point2	0.0718 m/s <sup>2</sup>		
VSC Calibration Status	Calibrated		
VSC Assembly Information	Normal Position		
Yaw Rate/G Sensor Voltage Invalid Flag	ON		
Yaw Rate/G Sensor Malfunction Flag1	OK		
Yaw Rate/G Sensor Invalid Flag1	ON		

Confirm the output of the "Total Weight Information" value.

All Data Text Search

Sort by default Sort by name Sort by selection Sort by unit

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Action	4-Way Seat	6-Way / 8-Way Seat
Once the Zero Point Calibration has been completed, confirm the "Total Weight Information" at each numbered position.		
Seat Position Steps	● → ① → ②	● → ① → ② → ③ → ④
Confirmation Points	① ②	① ② ③ ④
Target Value	±3.70 lbs	±4.80 lbs

a. Refer to the Repair Manual for instructions on Vehicle Interior / SUPPLEMENTAL RESTRAINT SYSTEMS: OCCUPANT CLASSIFICATION SYSTEM: DATA LIST / ACTIVE TEST.

- [Highlander](#)
- [RAV4](#)
- [Sienna HV](#)

b. For 4-way seat:

Confirm that the Total Weight Information value is within ±3.70 lbs at each confirmation point.

**HINT:** Refer to the chart above for reference.

- 1) With the seat in the lowest and forward most position, move the seat to the rear most position and confirm the “Total Weight Information” value in the data list.
- 2) Move the seat to the forward most position and confirm the “Total Weight Information” value in the data list.

**Do all the confirmation point values fall within the target range value?**

**YES** – Proceed to **Step 3**.

**NO** – **STOP** and contact FTS to report findings.

c. For 6-way and 8-way seats:

Confirm that the Total Weight Information value is within ±4.80 lbs at each confirmation point.

**HINT:** Refer to the chart above for reference.

- 1) With the seat in the lowest and forward most position, move the seat to the rear most position and confirm the “Total Weight Information” value in the data list.
- 2) Move the seat to the rear upper position and confirm the “Total Weight Information” value in the data list.
- 3) Move the seat to the front upper position and confirm the “Total Weight Information” value in the data list.
- 4) Move the seat to the front lower position and confirm the “Total Weight Information” value in the data list.

**Do all the confirmation point values fall within the target range value?**

**YES** – Proceed to **Step 3**.

**NO** – **STOP** and contact FTS to report findings.

**3. PERFORM FINAL CONFIRMATION CHECK**

Sit on the passenger front seat and confirm if the airbag light changes from “**OFF**” to “**ON**”.

**Does the passenger airbag indicator light switch to ON?**

**YES** – Campaign complete.

**NO** – Perform zero point calibration again and recheck.

◀ **VERIFY REPAIR QUALITY** ▶

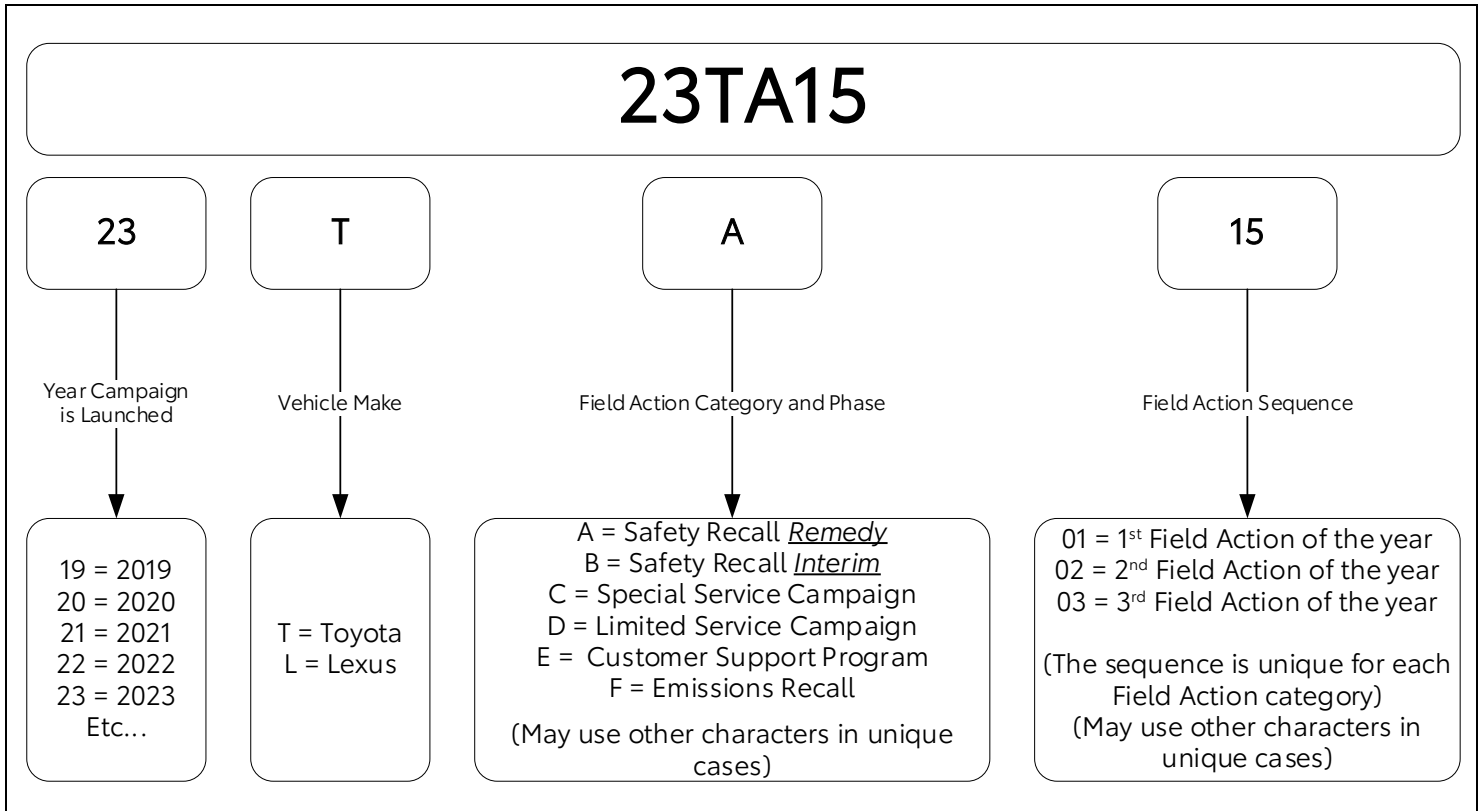
- **Confirm all bolts are properly torqued.**
- **Confirm all seat track bolts and wire harness connectors are installed correctly.**
- **Confirm no DTCs present after repair.**

## IX. APPENDIX

### A. PARTS DISPOSAL

In accordance with Federal law, please make sure all recalled parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, **unless requested for parts recovery return.**

### B. CAMPAIGN DESIGNATION DECODER



#### Examples:

19TA01 = Launched in 2019, Toyota, Safety Recall Remedy Phase, 1st Safety Recall Launched in 2019

20TC02 = Launched in 2020, Special Service Campaign, 2nd Special Service Campaign Launched in 2020

21TE05 = Launched in 2021, Customer Support Program, 5th Customer Support Program Launched in 2021