THIS LSC EXPIRES DECEMBER 31, 2017

TECHNICAL INSTRUCTIONS

FOR

LIMITED SERVICE CAMPAIGN

F₀B

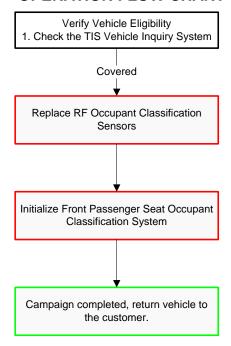
OCCUPANT CLASSIFICATION SYSTEM (OCS) SENSOR

CERTAIN
2013 MODEL YEAR AVALON & AVALON HV

All dealership associates involved in the campaign process are required to successfully complete E-Learning course SC13A. To ensure that all vehicles have the repair performed correctly; technicians performing this recall repair are required to currently hold at least one of the following certifications levels:

- Toyota Expert (Electrical)
- Master
- Master Diagnostic Technicians

I. OPERATION FLOW CHART



II. IDENTIFICATION OF AFFECTED VEHICLES

NOTE:

- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this LSC, and that the campaign has not already been completed prior to dealer shipment or by another dealer.
- TMS warranty will not reimburse dealers for repairs conducted on vehicles that are not affected or were completed by another dealer.

III. PREPARATION

A. PARTS

Part Number	Part Description	Quantity		
04004-73106	SENSOR KIT, WEIGHT DETECTOR*	1		
*The kit above includes the following parts.				
89105-07010	SENSOR SUB-ASSY, WEIGHT DETECTOR FR INN	1		
89106-07010	SENSOR SUB-ASSY, WEIGHT DETECTOR FR OUT	1		
or				
89105-06050	SENSOR SUB-ASSY, WEIGHT DETECTOR FR INN	1		
89106-06050	SENSOR SUB-ASSY, WEIGHT DETECTOR FR OUT	1		
Note: Either conset set will work in any Ayalan covered by this LSC. The difference in the nart				

Note: Either sensor set will work in any Avalon covered by this LSC. The difference in the part numbers is the supplier.

B. TOOLS & EQUIPMENT

- Standard Hand Tools
- Techstream
- Torque Wrench

SST- These are essential special service tools that the dealership should have.

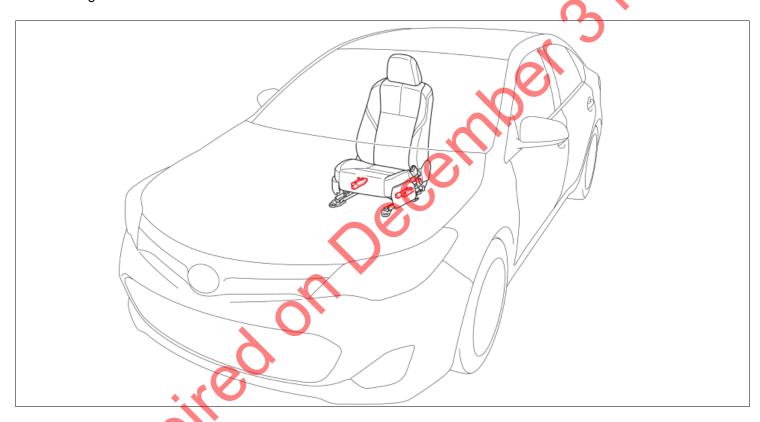
Part Number	Description	Quantity
00002-06000-01	Plastic Pry Tool Set	1
00002-09077-01	OCCUPANT SEAT WEIGHTS	1

IV. WORK PROCEDURE TABLE OF CONTENTS

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V. BACKGROUND

The front passenger seat assembly is equipped with sensors for the occupant classification system which are used to control the operation of supplemental restraint systems (SRS), including the front passenger airbag. The sensors classify the weight of the occupant and activate or deactivate the front passenger airbag accordingly. Additionally, the sensors are used to detect certain vehicle collisions. Due to the current collision detection thresholds, the system may interpret certain occupant seating usages or road conditions as a rear collision and illuminate the Airbag Warning Light and "AIR BAG OFF" indicator, disabling the front passenger air bag.



VI. PRE-WORK

1. CHECK FOR DTCs



This campaign only covers the replacement of the OCS sensors. No other components in the SRS system are covered by this campaign.

a) Using Techstream, perform a health check to confirm if there are any SRS system related DTCs present in the system (current, history or pending).

NOTES:

- Ensure that the Techstream software is 9.2 or higher.
- On the "connect to vehicle" screen, enter the VIN number to ensure that the vehicle information is uploaded to TIS.
- Record any SRS system DTCs to aid in any additional dicussions needed with the customer.

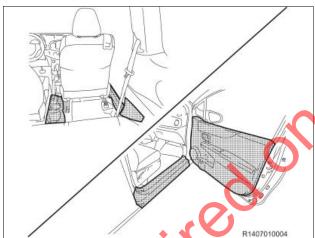
2. RECORD SYSTEM SETTINGS

a) Record any audio and climate control settings prior to disconnecting the negative battery terminal.

3. INSPECT THE OPERATION OF THE RIGHT FRONT SEAT SLIDING & RECLINING FUNCTIONS

a) For power seat check that the seat moves smoothly through all fore/aft and reclining operations.

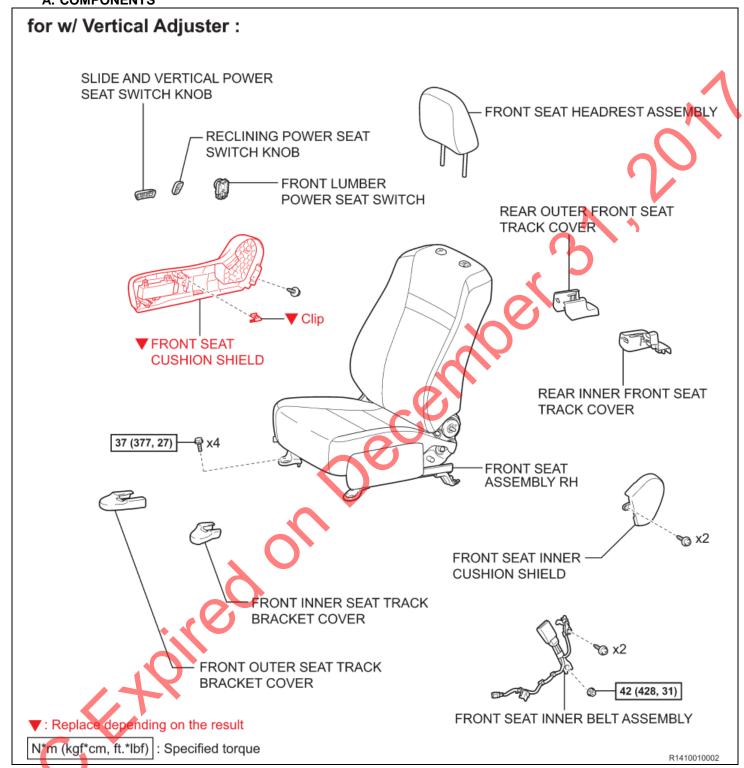
4. RECORD THE POSITION OF THE RIGHT FRONT SEAT

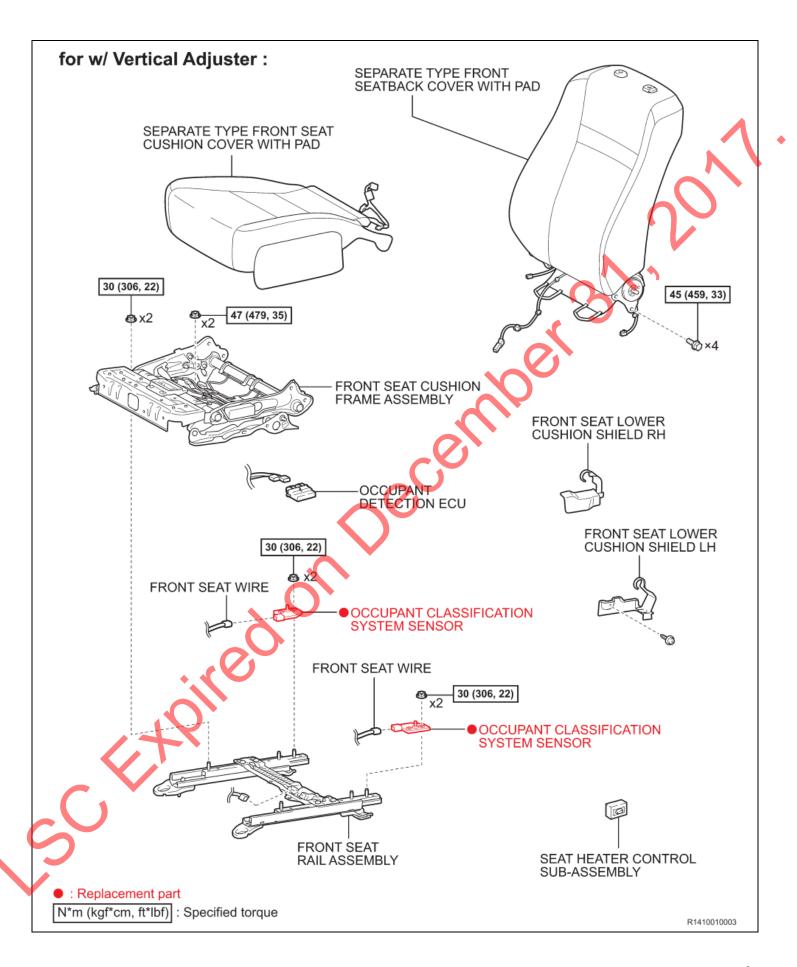


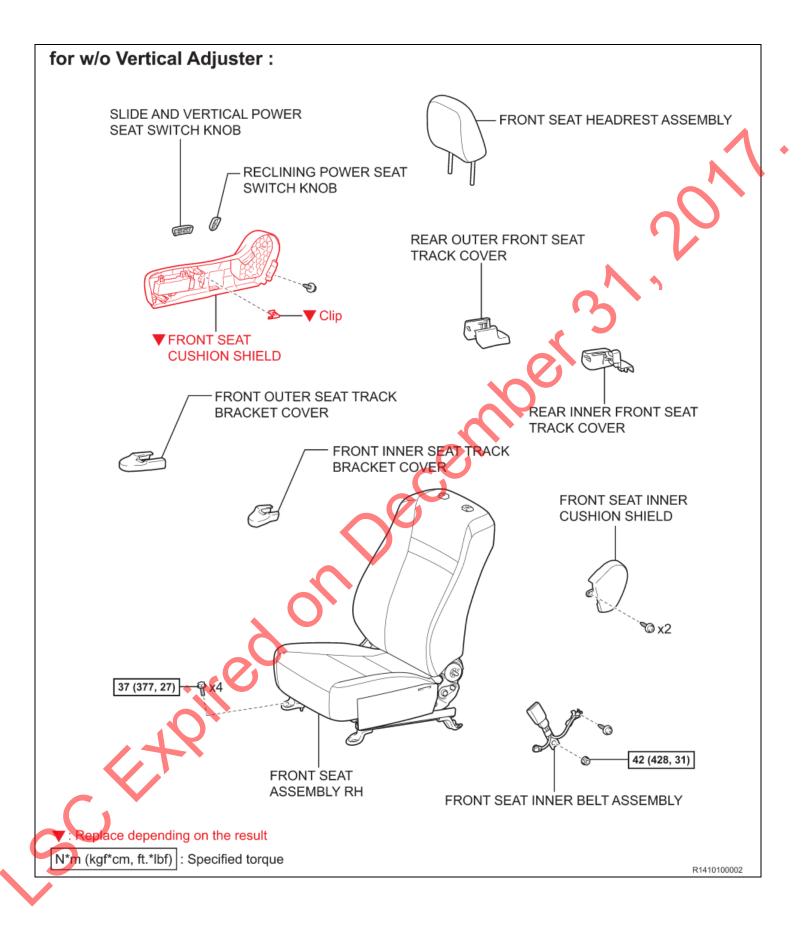
5. INSTALL PROTECTIVE COVERS

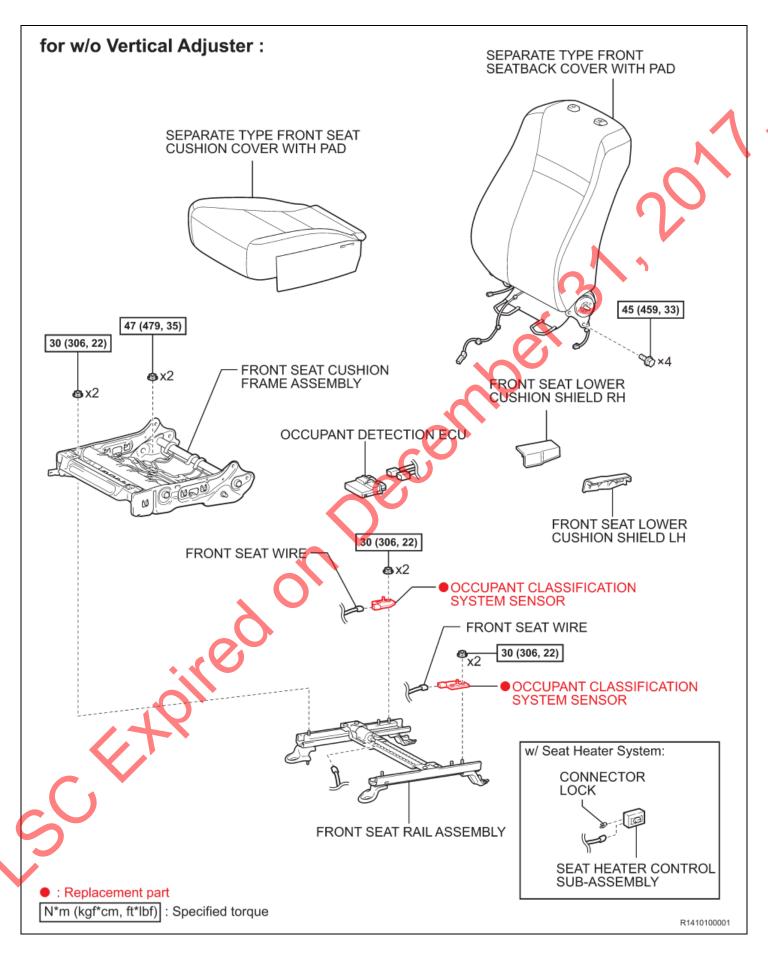
 Apply protective covers to the following areas to prevent interior parts and the vehicle body from being damaged during R&R of the right front seat.

VII. WORK PROCEDURE A. COMPONENTS





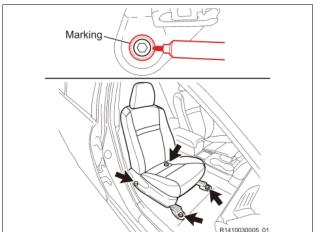




1. REMOVE THE RIGHT FRONT SEAT



- When replacing the OCS sensor, it is necessary to mark the position of certain parts prior to removal in order to assure proper alignment during reassembly.
- DO NOT damage interior components during R&R of the right front seat.
- 2 people may be required when removing the front seat from the vehicle.

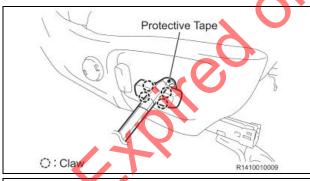


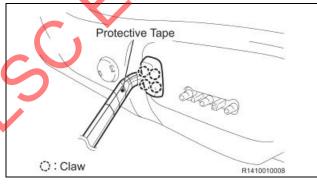
- a) Remove the headrest.
- b) Remove any seat track covers (if equipped).
- c) Mark the 4 seat mounting bolts as shown.
- d) Remove the 4 seat mounting bolts.



2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

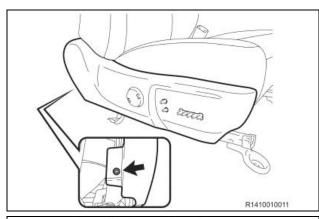
- a) Always disconnect the negative terminal before working with any SRS components in order to prevent unintentional deployment.
- b) Wait 90 seconds or more after disconnecting the negative terminal before performing any work due to the backup power supply equipped to the airbag system.
- c) Disconnect each connector and clamp under the seat.
- d) Remove the seat.
- e) Place the seat on a clean workbench.

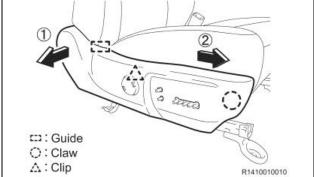


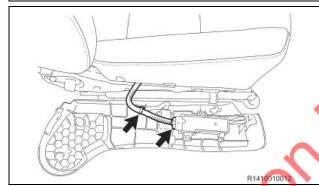


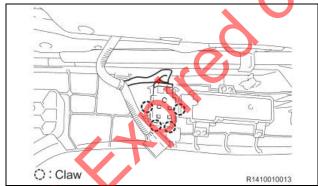
3. REMOVE THE CUSHION SHIELD

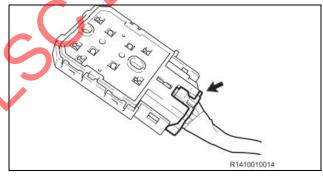
- a) Wrap the molding removal tool with tape.
- b) Disengage the 4 claws for the fore/aft seat switch knob.
- c) Disengage the 4 claws for the backrest seat switch knob.



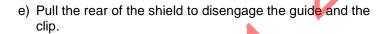








d) Remove the screw.



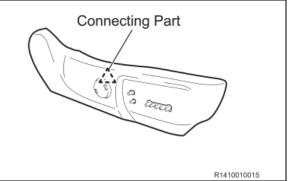
f) Slide the shield forward to remove the claw.



1. Disconnect the seat switch and clamp.

2. Disengage the 4 claws and remove the power seat switch.

3. Disconnect the connector.



::3: Guide

4. INSPECT CUSHION SHIELD

a) Compare the cushion shield to the chart below to determine if the shield is reusable.

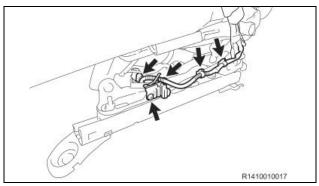
Condition	Increation result	Action
	Inspection result	Action
The clip is installed to the front seat cushion shield.	OK	No replacement necessary Reuse current part
The clip was removed from the front seat cushion shield.		
R1408080048	NG	Replace Clip Discard the old clip and replace with a new clip.
The front seat cushion shield is damaged. Damage	NG	Replace the cushion shield Discard the cushion shield and replace with a new one.

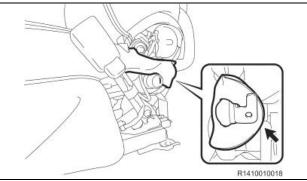
5. REMOVE THE INNER CUSHION SHIELD

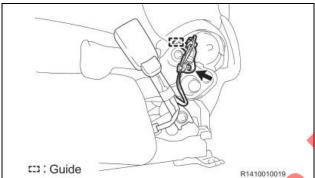
1. Remove the 2 screws.

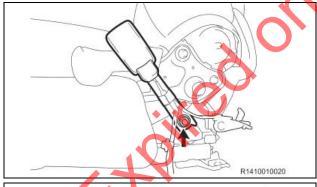
R1410010016

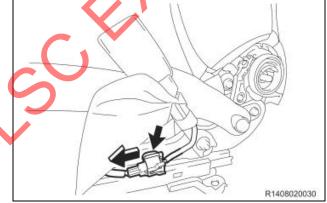
2. Disengage the guide and the inner shield.











6. REMOVE THE SEAT BELT BUCKLE

VEHICLES WITH VERTICAL ADJUSTER ONLY

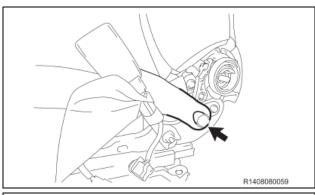
- 1. Disconnect the connector.
- 2. Remove the screw and the seat switch.
- 3. Disengage the 3 clamps.
- 4. Unhook the seat cushion cover.

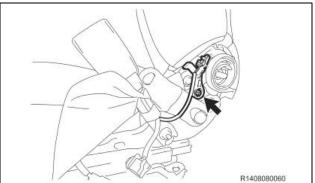
- 5. Remove the screw.
- 6. Disengage the guide and remove the seat switch

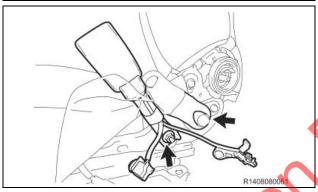
7. Remove the nut and the buckle.

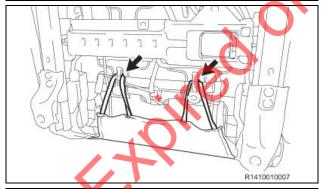
VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

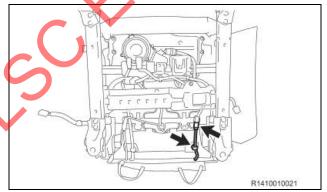
- 1. Disconnect the connector.
- 2. Disengage the clamp.











3. Unhook the seat cushion cover.

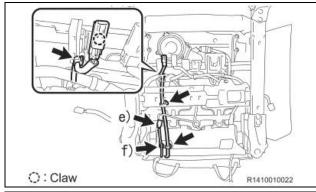
- 4. Remove the screw.
- 5. Remove the seat switch

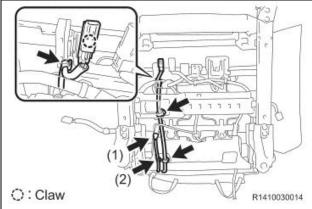
- 6. Remove the nut and the buckle.
- 7. Unhook the seat cover.

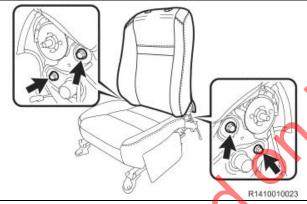
7. REMOVE THE SEATBACK

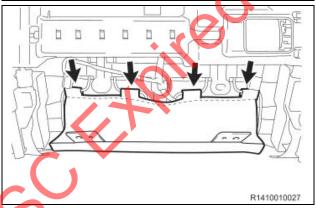
a) Disengage the 2 seatback cover bands.

b) Disconnect the connector and the clamp.









VEHICLES WITH VERTICAL ADJUSTER ONLY

- 1. Wrap the tip of a screwdriver with tape.
- 2. Disengage the claw at the back of the connector.
- 3. Disengage the 3 clamps.
- 4. Disconnect the connector.
- 5. Disengage the clamp.

VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

- 1. Wrap the tip of a screwdriver with tape.
- 2. Disengage the claw at the back of the connector.
- 3. Disengage the 3 clamps.

WITHOUT VERTICAL ADJUSTER AND WITH SEAT HEATER

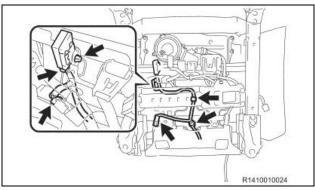
- 1. Disconnect the connector.
- 2. Disengage the clamp.
- c) Remove the 2 bolts from the left side.
- d) Remove the 2 bolts from the right side while holding the seatback.
- e) Remove the seatback from the lower seat frame.

NOTE: The bolts were pre-coated with thread locker.

However, there is no need to apply thread locker upon reinstallation.

8. REMOVE THE SEAT CUSHION AND COVER

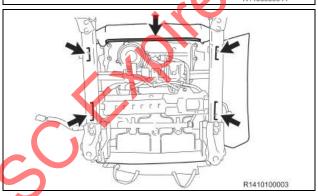
a) Disengage the 4 hooks.





DO NOT drop





VEHICLES WITH VERTICAL ADJUSTER ONLY AND WITHOUT VERTICAL ADJUSTER AND WITH SEAT HEATER

- 1. Disconnect the 2 connectors.
- 2. Disengage the 4 clamps.

WITHOUT VERTICAL ADJUSTER AND WITH SEAT HEATER

- 1. Remove the connector lock from the seat heater controller.
- 2. Disconnect the connector.

DO NOT drop the seat heater controller.

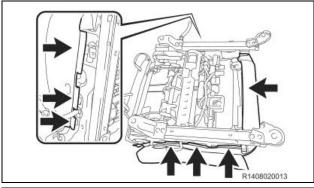
STOP

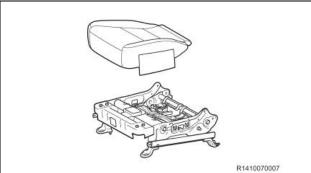
Replace the seat heater controller with a *NEW* one if dropped.

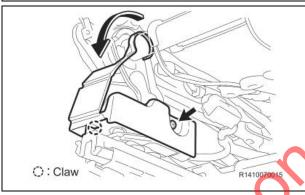
Mark the dropped seat heater controller so it is not reused.

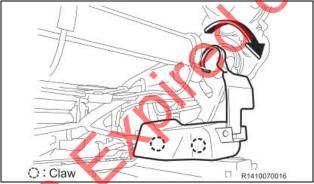
VEHICLES WITH VERTICAL ADJUSTER ONLY

1. Disengage the 5 hooks.









VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

1. Disengage the 7 hooks.

b) Remove the seat cushion and cover.

9. REMOVE THE LEFT AND RIGHT LOWER CUSHION SHIELD

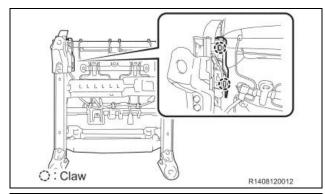
VEHICLES WITH VERTICAL ADJUSTER ONLY

Left side

- 1) Remove the screw.
- 2. Disengage the claw and the clamp to remove the cushion shield.

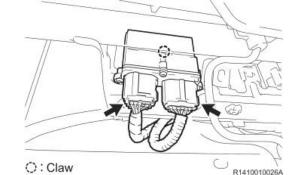
Right side

1. Disengage the 2 claws and the clamp to remove the seat cushion shield.



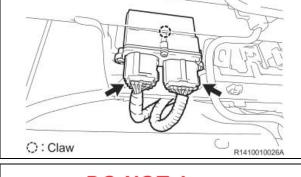
VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

- 1. Disengage the 2 claws and remove the lower cushion shield.
- 2. Repeat on the other side.



10. REMOVE THE OCS ECU

- a) Disconnect the 2 connectors.
- b) Wrap the tip of a screwdriver with tape.
- c) Disengage the claw and remove the OCS ECU.





DO NOT drop the ECU. If dropped replace the ECU with a *NEW* one and mark the dropped ECU so it is not reused.

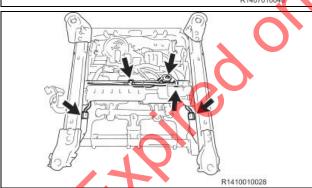


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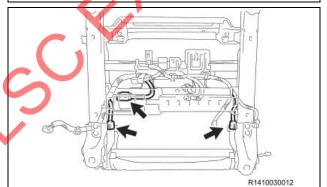
VEHICLES WITH VERTICAL ADJUSTER ONLY

1. Disconnect the 3 connectors and the 2 clamps.



VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

1. Disconnect the 3 connectors.



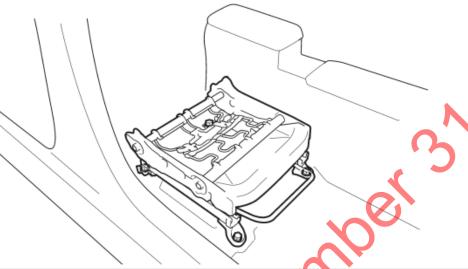
12. DISASSEMBLE THE LOWER SEAT FRAME



- Disassemble the lower seat frame with it installed in the vehicle to keep various components properly aligned.
- Disassembling and reassembling the lower seat frame outside the vehicle will cause various misalignment issues, if this occurs, replace the lower seat frame.

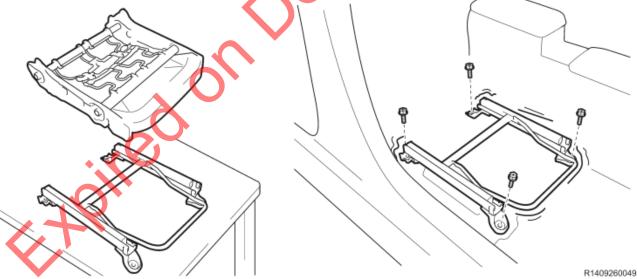


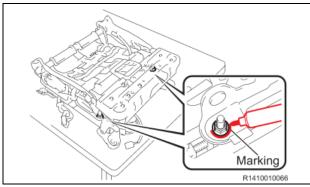
Install in vehicle before disassembly.



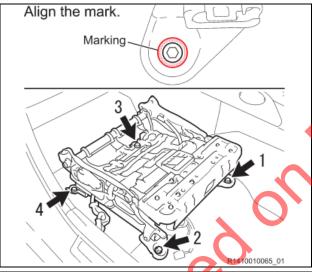
NG Disassembly without installing in vehicle.

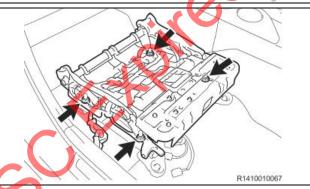












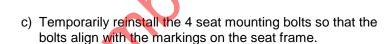
a) Mark the 2 nuts as shown on the lower seat frame.



Be sure to mark the nuts as shown to prevent misalignment of the seat. (The marks are needed to return parts to their original position.)

It is not necessary to put marks for all 4 nuts that attach the seat frame. Marking the 2 front nuts is sufficient.

b) Temporarily reinstall the lower seat frame back into the vehicle.

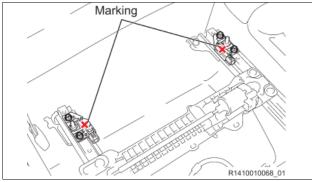


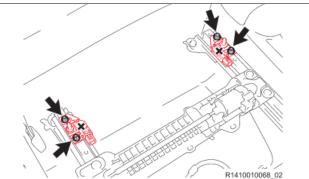


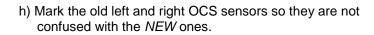
Take care not to damage the body. Tighten evenly.

- Fully tighten the bolts in the order shown in the illustration.

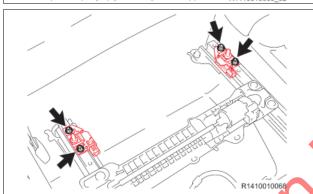
 Torque: 37 N*m (377 kgf*cm, 27 ft.*lbf)
- e) Confirm the markings are in the correct position.
- f) Remove the 4 nuts shown from the seat frame.
- g) Remove the seat pan.

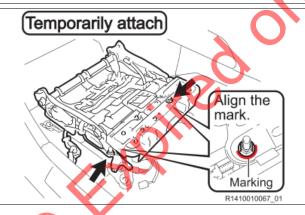






- i) Remove the 2 nuts for each of the OCS sensors
- j) Remove the OCS sensors.





13. REASSEMBLE THE SEAT FRAME

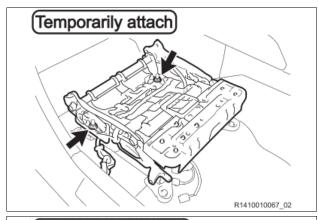
THE OCS sensors are very sensitive and are easily damaged. DO NOT hit or force any part during reassembly.

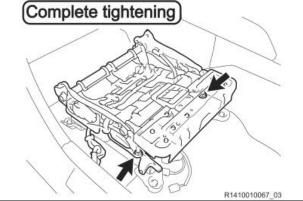
- a) Wipe off the OCS sensor mounting area.
- b) Install the NEW left and right OCS sensors.
- c) Reinstall 2 nuts on each side and tighten evenly. Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)
- d) Reinstall the seat pan and temporarily reinstall the 2 nuts at the front so that they align with the markings.

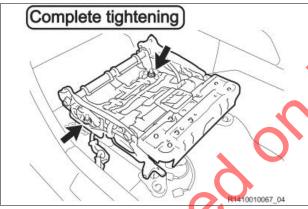


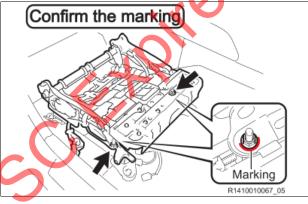
- If the seat pan is caught on a bolt and cannot be installed, loosen the nuts for the OCS sensors and reinstall it.
- If the nuts are not aligned with the markings, loosen the nuts for the OCS sensors and reinstall it.
- If you had to loosen the nuts for the OCS sensors, retorque to the correct value.

Torque: 25 N*m (255 kgf*cm, 22 ft.*lbf)









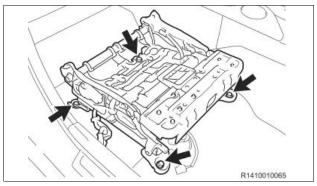
e) Temporarily reinstall the 2 rear nuts as shown.

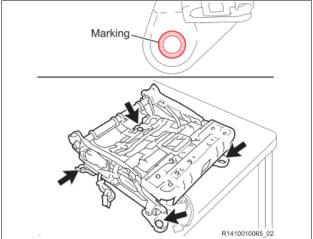
f) Fully tighten the 2 front nuts. Torque: 30 N*m (306 kgf*cm, 22 ft.*lbf)

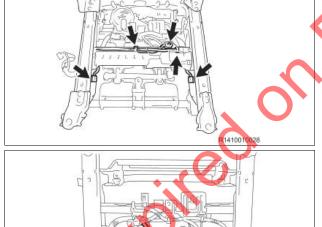
g) Fully tighten the 2 rear nuts.

Torque: 47 N*m (479 kgf*cm, 35 ft.*lbf)

h) Confirm that all markings are all lined up.







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i) Remove the 4 seat mounting bolts and remove the lower seat frame from the vehicle.

NOTE: When removing the lower seat frame be careful not to damage the vehicle.

j) Using a small amount of parts cleaner and a clean cloth, remove the markings from the seat mounting area.

14. RECONNECT THE SEAT HARNESS

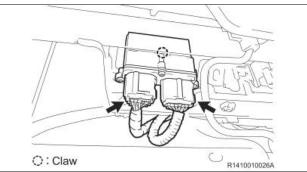
VEHICLES WITH VERTICAL ADJUSTER ONLY

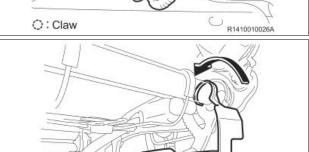
1. Reconnect the 3 connectors and the 2 clamps.

VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

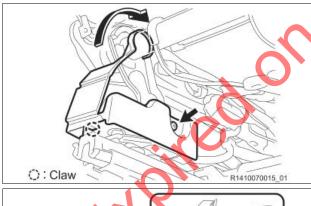
1. Reconnect the 3 connectors and the 2 clamps.

DO NOT drop

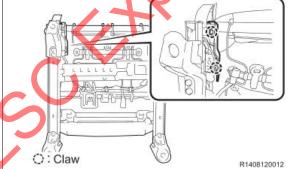




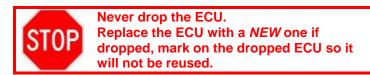
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O: Claw



15. REINSTALL THE OCS ECU



- a) Engage the claw to install the occupant detection ECU
- b) Reconnect the 2 connectors.

16. REINSTALL THE LEFT AND RIGHT LOWER CUSHION SHIELD

VEHICLES WITH VERTICAL ADJUSTER ONLY

Right side

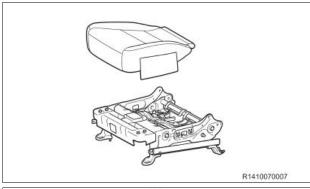
1. Reengage the 2 claws and the clamp to reinstall the shield.

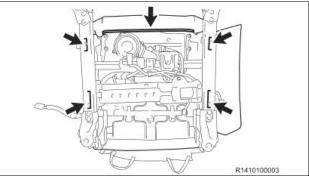
Left side

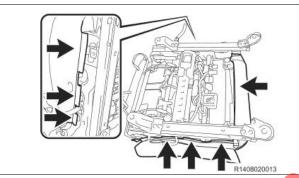
- 1. Reengage the claw and the clamp to reinstall the shield.
- 2. Reinstall the screw.

VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

- 1. Reengage the 2 claws for the lower cushion shield.
- 2. Repeat on the other side.









17. REINSTALL THE SEAT CUSHION AND COVER

a) Temporarily reinstall the seat cushion and cover onto the lower seat frame

VEHICLES WITH VERTICAL ADJUSTER ONLY

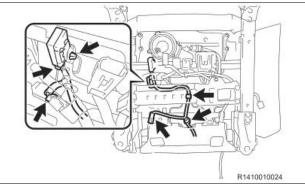
1. Reengage the 5 hooks.

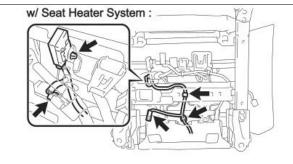
VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

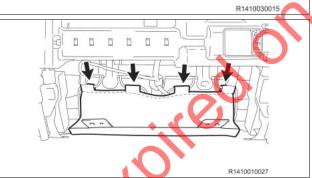
1. Reengage the 7 hooks.

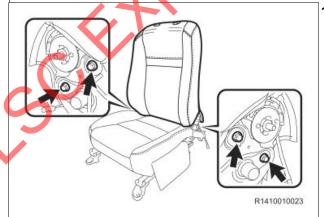
- 2. Reconnect the connector.
- 3. Reinstall the connector lock onto the seat heater controller.











DO NOT drop the seat heater controller.



Replace the seat heater controller with a *NEW* one if dropped.

Mark the dropped seat heater controller so it is not reused.

VEHICLES WITH VERTICAL ADJUSTER ONL

- 1. Reconnect the 2 connectors.
- 2. Reengage the 4 clamps.



- 1. Reconnect the connector.
- 2. Reengage the 4 clamps.

b) Reengage the 4 hooks.

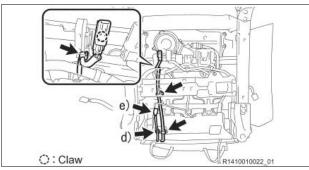
18. REINSTALL THE SEATBACK

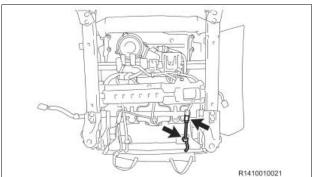
- a) Temporarily reinstall the 2 right bolts while holding the seatback.
- b) Temporarily reinstall the limit switch assembly with the 2 bolts from the left side.
- c) Tighten the 4 bolts.

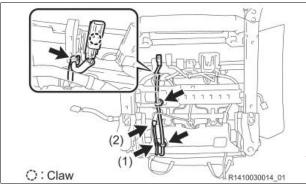
Torque: 45 N*m (459 kgf*cm, 33 ft.*lbf)

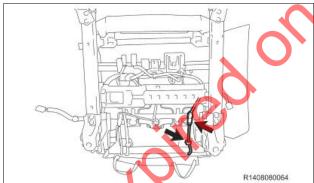
NOTE: The bolts were pre-coated with thread locker.

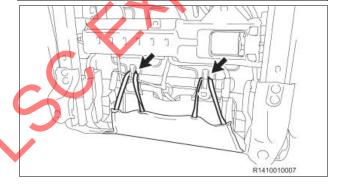
However, there is no need to apply thread locker upon reinstallation.











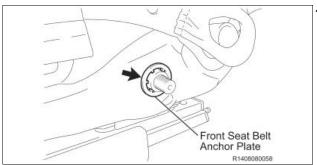
VEHICLES WITH VERTICAL ADJUSTER ONLY

- 1. Reengage the clamp.
- 2. Reconnect the connector.
- 3. Reengage the claw and 3 clamps for the airbag harness.
- 4. Reconnect the connector and the clamp.

VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

- 1. Reengage the claw and the 3 clamps for the airbag harness.
- 2. Reengage the clamp.
- 3. Reconnect the connector.
- 4. Reconnect the connector and the clamp.

d) Reengage the 2 bands for the seatback cover.



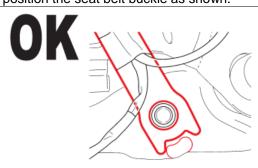
19. REINSTALL THE SEAT BELT BUCKLE

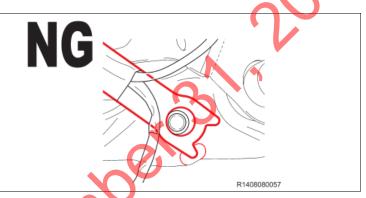
a) Check that the front seat belt anchor plate is present.

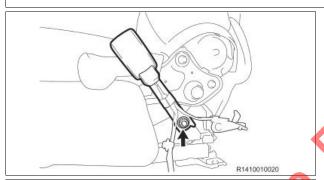
VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

1. Route the seat belt buckle harness through the opening in the seat cushion cover.

b) Align and position the seat belt buckle as shown.



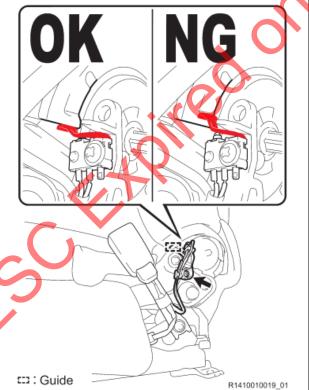




VEHICLES WITH VERTICAL ADJUSTER ONLY

1. Reinstall the buckle and the nut.

Torque: 42 N*m (428 kgf*cm, 31 ft.*lbf)

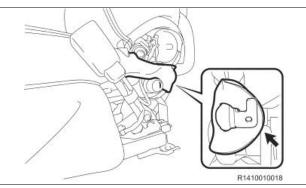


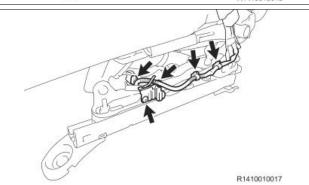
VEHICLES WITH VERTICAL ADJUSTER ONLY

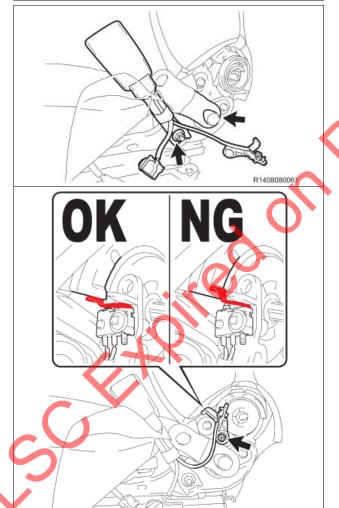
- 1. Reengage the guide.
- 2. Reinstall the seat switch with the screw.



Ensure that the switch is in the correct position, or an abnormal noise may occur.







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3. Reinstall the seat cushion cover.

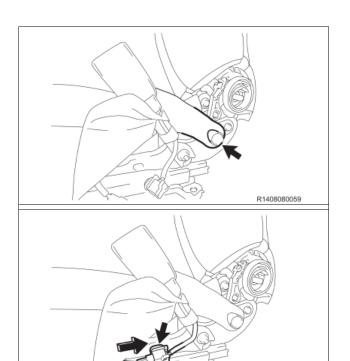
- 4. Reengage the 3 clamps.
- 5. Reinstall the seat switch.
- 6. Reconnect the connector.

- **VEHICLES WITHOUT VERTICAL ADJUSTER ONLY**1. Reinstall the buckle and the nut. Torque: 42 N*m (428 kgf*cm, 31 ft.*lbf)
- 2. Reinstall the seat cushion cover.

3. Reinstall the seat switch with the screw.

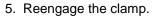


Ensure that the switch is in the correct position, or an abnormal noise may occur.

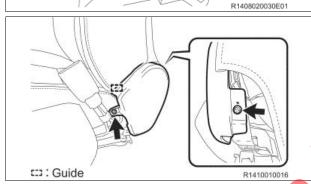




NOTE: Route the wiring between the two covers.

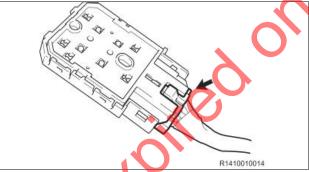


6. Reconnect the connector.



20. REINSTALL THE INNER CUSHION SHIELD

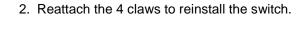
- a) Reinsert the guild to reinstall the shield.
- b) Reinstall the 2 screws.



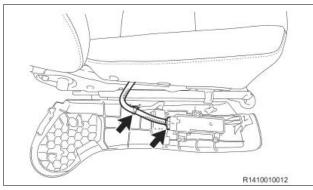
21. REINSTALL THE FRONT CUSHION SHIELD

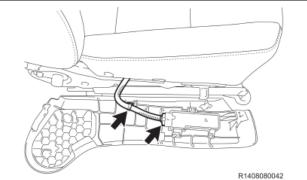
VEHICLES WITH VERTICAL ADJUSTER ONLY

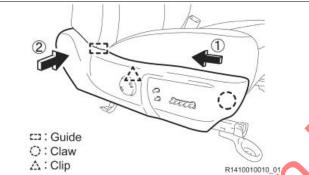
1. Reconnect the connector for the power seat switch.

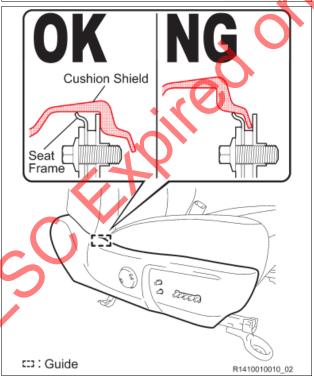












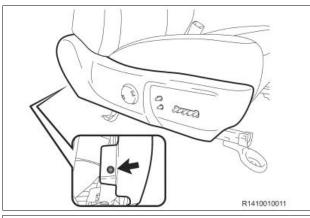
3. Reconnect the seat switch connector and the clamp.

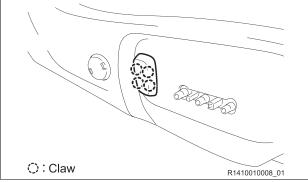
VEHICLES WITHOUT VERTICAL ADJUSTER ONLY

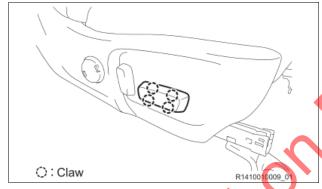
- 1. Reconnect the connector for the power seat switch.
- 2. Reengage the clamp.

- c) Starting from the front reattach the cushion shield by reengaging the claw and the clip.
- d) Reengage the guide to reinstall the shield.

e) Inspect that the guild is correctly positioned.







f) Reinstall the screw.

g) Reengage the 4 claws for the reclining switch knob.

h) Reengage the 4 claws for the fore and aft switch knob.

22. REINSTALL THE RIGHT FRONT SEAT

- a) Reinstall the right front seat.
- b) Reconnect any connectors for the seat.



- Follow the procedure described below in order to prevent the seat tracks from locking separately.
- DO NOT damage components during R&R front seat.
 - 2 people may be required when installing the front seat into the vehicle.



c) Reinstall the seat mounting bolts.

NOTE: If the bolts are not tightened in the correct sequence, the alignment may be incorrect.

Torque: 37 N*m (377 kgf*cm, 27 ft.*lbf)

- d) Reinstall seat track covers (if equipped)
- e) Reinstall the headrest.
- f) Continue to SECTION VIII.

VIII. QUALITY CONFIRMATION

- 1. RECONNECT THE NEGATIVE BATTERY TERMINAL
- 2. REMOVE ANY PROTECTIVE COVERS
- 3. CHECK THE OPERATION OF THE PASSENGER AIRBAG ON/OFFINDICATOR
- 4. CHECK SEAT HEATER OPERATION (if equipped)
- 5. INSPECT THE SEAT OPERATION OF SEAT SLIDING & RECLINING



- Always perform inspection.
- In case of heavy sliding, abnormal noise, or locking failure of sliding/reclining, compared to before replacement, replace the separate type front seat cushion spring assembly with a *NEW* one.
- 6. CHECK FOR DTCs
- 7. PERFORM OCS ECU INITIALIZATION
 - a) Perform zero point calibration and sensitivity check.

Refer to the Technical Information System (TIS), using the applicable vehicle and model year.

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NOTE: If the standard value cannot be satisfied, change the weight position and perform check again.

- 8. REINITIALIZE SYSTEMS
 - a) Restore any memory settings and initialize any system needed (i.e. power windows, moonroof, etc.)
- 9. RETURN THE SEAT TO THE ORIGINAL POSITION

■ VERIFY REPAIR QUALITY ■

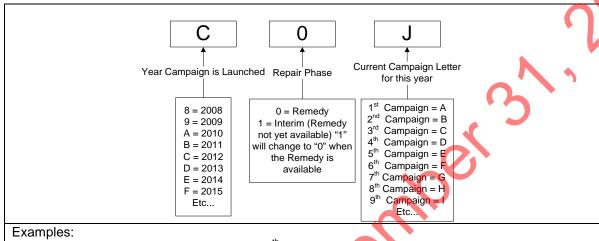
- Proper seat operation
- Proper passenger side airbag light operation
- -If you have any questions regarding this OCS sensor replacement, please contact your regional representative.

IX. APPENDIX

A. PARTS DISPOSAL

As required by Federal Regulations, please make sure all campaign 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



A0D = Launched in 2010, Remedy Phase, 4th Campaign Launched in 2010 B1E = Launched in 2011, Interim Phase, 5rd Campaign Launched in 2011 C1C = Launched in 2012, Interim Phase, 3rd Campaign Launched in 2012