TECHNICAL INSTRUCTIONS

FOR

SPECIAL SERVICE CAMPAIGN JLH

INTELLIGENT CLEARANCE SONAR (ICS) SYSTEM REPROGRAM

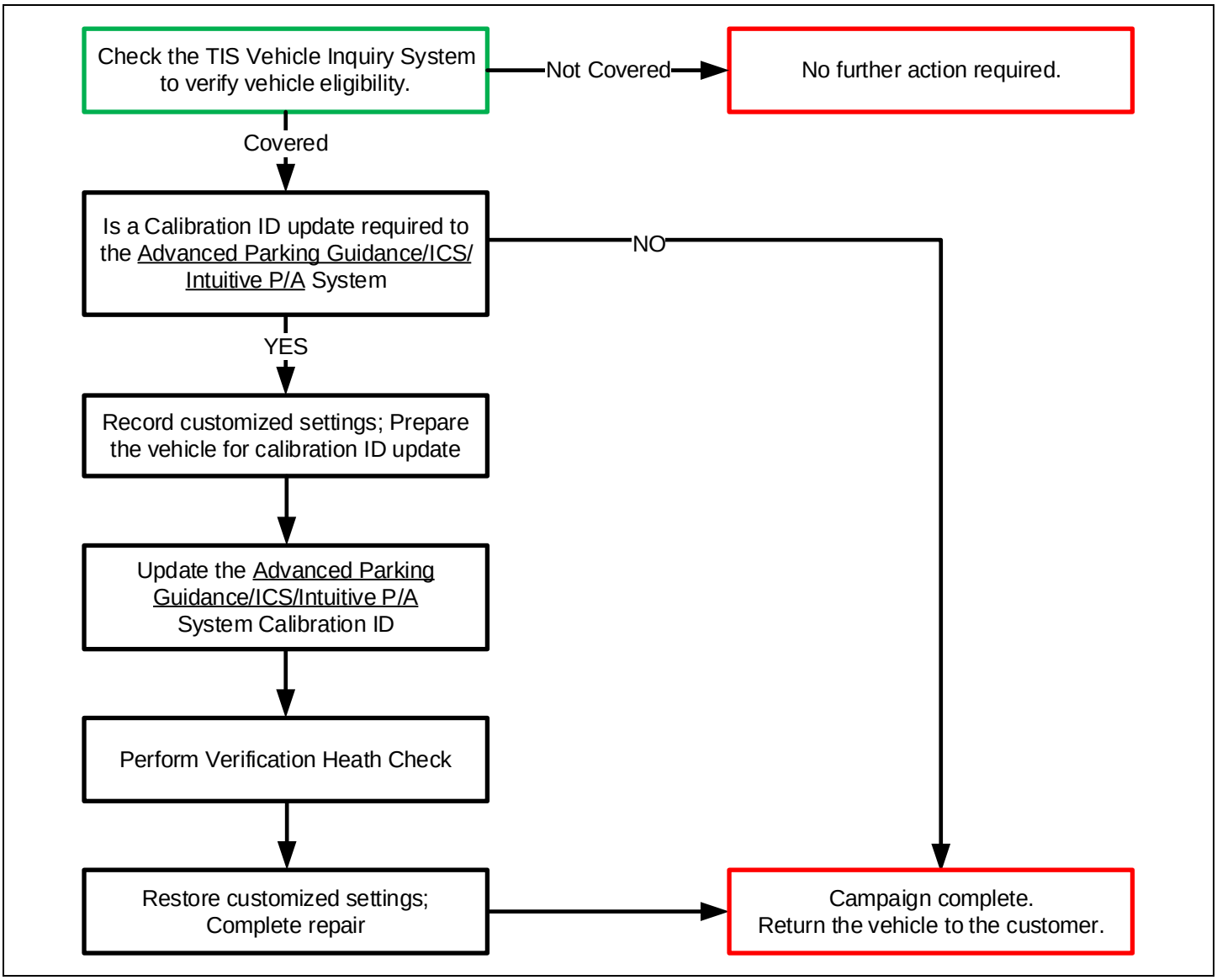
CERTAIN:
2018 LS 500 and LS 500h
2018 NX 300 and NX 300h
2018 RX 350L and RX 450hL
2017-2018 RX 350 and RX 450h

The repair quality of covered vehicles is extremely important to Lexus. All dealership technicians performing this recall are required to successfully 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 currently hold at least one of the following certification levels:

- **Certified**
- **Senior**
- **Master**

It is the dealership's responsibility to select technicians with the above certification level or greater to perform this recall repair. Carefully review your resources, the technician skill level, and ability before assigning technicians to this repair. It is important to consider technician days off and vacation schedules to ensure there are properly trained technicians available to perform this repair at all times.

I. OPERATION FLOW CHART



II. IDENTIFICATION OF AFFECTED VEHICLES

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

III. PREPARATION

1. TOOLS, SUPPLIES & EQUIPMENT

- Standard Hand Tools
- Techstream 2.0 / TIS Techstream / Techstream Lite
- GR8 Battery Diagnostic Station
- L-SB-0001-18

IV. BACKGROUND

The involved vehicles are equipped with Intelligent Clearance Sonar (ICS). When an involved vehicle enters a conveyor-type carwash and is placed into neutral, due to a programming error in the ICS system, the front sonar sensors in the system may incorrectly interpret the carwash brushes as a pedestrian or vehicle, and activate the ICS system. If the ICS system activates, the ICS system will exhibit warnings and the system may apply the brakes.

V. DETERMINE STATUS OF CURRENT CALIBRATION

1. CHECK FOR DTC'S

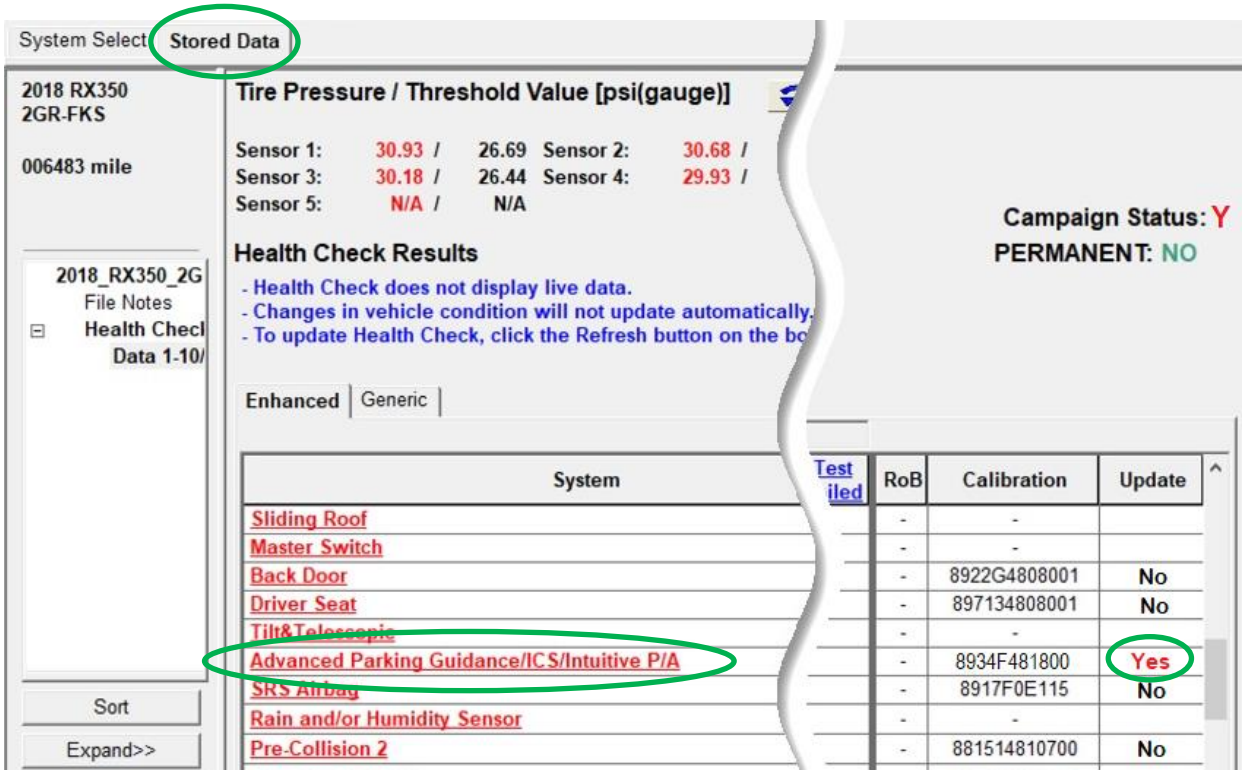
a. Using a Techstream, perform a Health Check to check for any Diagnostic Trouble Codes.

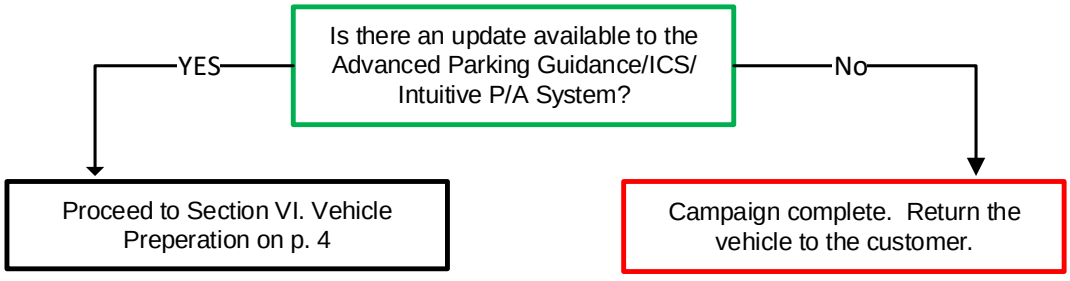
Note: This Campaign covers only the Calibration ID update to the Advanced Parking Guidance/ICS/Intuitive P/A System, as detailed in these instructions. It does not cover the diagnosis or replacement of any other systems on the vehicle.

2. CHECK CURRENT CALIBRATION

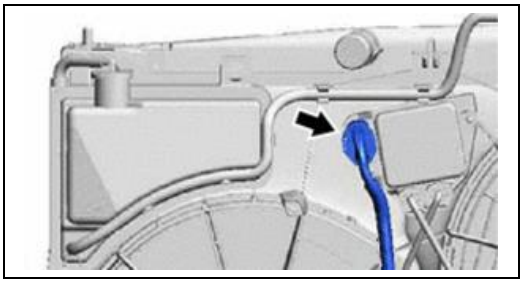
a. Locate the Update column for the **ADVANCED PARKING GUIDANCE/ICS/INTUITIVE P/A** System in the Stored Data tab for this vehicle.

b. Determine the status of an available update; indicated by a YES or NO.





VI. VEHICLE PREPERATION



RX 350 shown. Other models are similar.

1. DISCONNECT COOLING FAN

a. Disconnect the electrical connector from the cooling fan ECU on the radiator shroud.

Note: If the cooling fans run during the Calibration update procedure, the battery voltage will be inconsistent and could cause damage the control module.

2. PRESSURIZE HYDRO-BOOSTER (LS 500, all hybrid models)

a. Depress the brake pedal fully 2 times within 2 seconds.
b. Release the brake pedal.
c. Wait 10 seconds.

Note: The hydro-boost pump <u>may</u> run for a few seconds when completing these steps. The procedure will pressurize the system and prevent the pump from running during the Calibration update procedure. Not all vehicles are equipped with the Hydro-booster.

3. VEHICLE PREPARATION

a. Confirm the following conditions:
- Vehicle in the IG position (engine off).
- Transaxle in Park.
- Parking brake engaged.
- Turn off all electrical accessories (i.e. climate control, audio system, etc.)
- Headlight switch in the DRL OFF position.
- Windshield wiper switch in the OFF position.

4. CONNECT THE 12v BATTERY TO A POWER SUPPLY (GR8)

a. Connect the GR8 or other type of a power supply (not a battery charger) to the 12v battery.
b. Select the Power Supply Mode from the Charge Menu of the GR8.

STOP	**A power supply *MUST* be used during reprogramming. ECU damage will occur if the battery voltage is not properly maintained during this re-flash procedure.**

Note: A power supply must be connected directly to the 12v battery terminals and <u>NOT</u> the remote jump posts under the hood (if equipped).

5. VERIFY TECHSTREAM SETUP

a. Verify that the Techstream meets the following conditions:
- The latest version of software is loaded.
- The Techstream battery is fully charged. If not, connect the Techstream to a 120v source.
- The DLCIII cable is in good condition.

STOP	**The Techstream's battery voltage must be maintained during the update procedure. If necessary, plug the Techstream into a 120v outlet during this procedure.**

Note: If the Techstream's communication with the vehicle fails during the update procedure, the Clearance Warning ECU will be damaged.

6. RECORD CUSTOMIZED SETTINGS

The customized setting for this System will be lost during the Calibration update. It will be necessary to record the customers settings, prior to the update, to return the vehicle to its original condition.

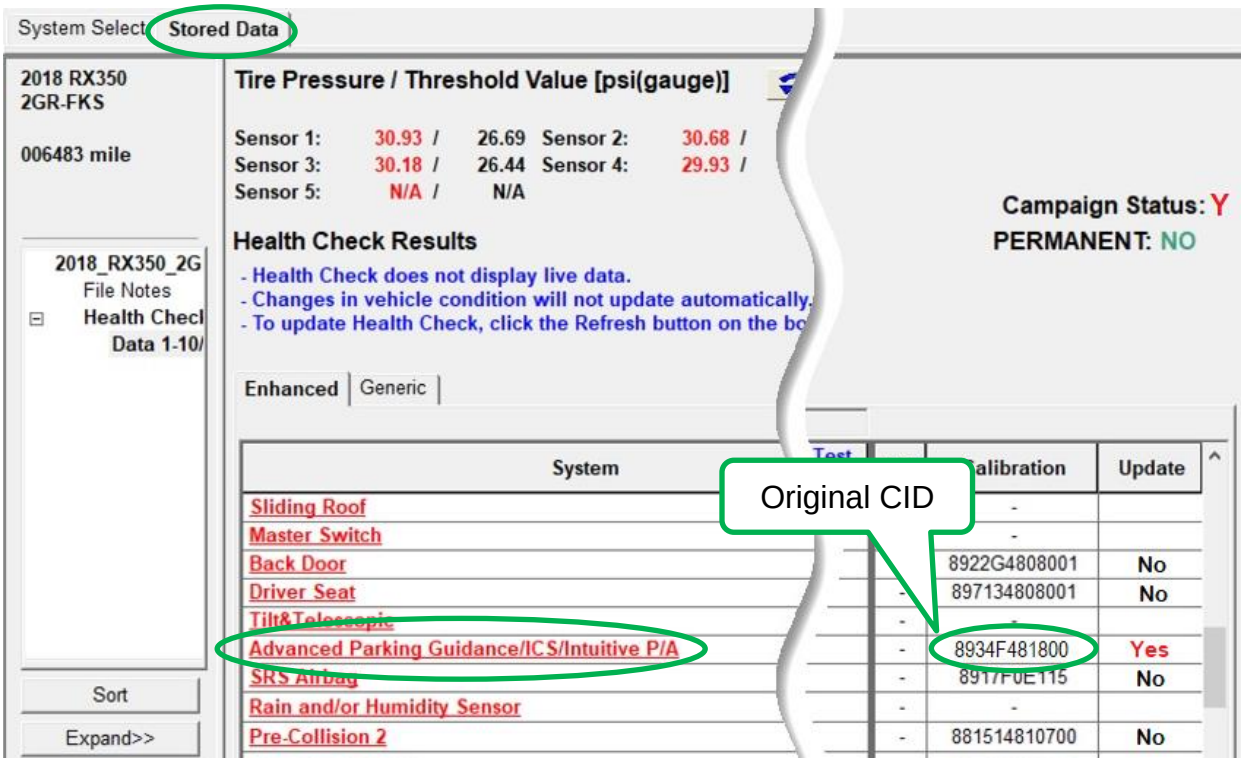
a. Use a Techstream to access the following data:
   - Advance Parking Guidance/ICS/Intuitive P/A → Customize → Warning, Sensor, Display, and Others.

b. Record the Customized Settings on the sheets provided in Section: X APPENDIX on p. 10.
   STEP A (LS500 & LS500h)
   STEP B (RX350 & RX450h & RX350L & RX450hL)
   STEP C (NX300 & NX300h)

VII. UPDATE CALIBRATION

1. UPDATE THE ADVANCED PARKING GUIDANCE/ICS/INTUITIVE P/A SYSTEM

a. Identify the vehicles Original CID for the Advanced Parking Guidance/ICS/Intuitive P/A System on the Stored Data tab.



b. Locate the vehicles Original CID in the chart on the following page.
c. Select the corresponding NEW CID link to load the update.
d. Follow the on-screen instructions to complete the Calibration Update procedure.

The CID Update Procedure is detailed in L-SB-0001-18 Please reference this Bulletin for more detailed procedures and information.

Be extremely careful to select the correct NEW CID that corresponds to the Original CID.

Vehicle Specification		Clearance Warning ECU Calibrations	
Model	**MY**	**Current CID**	**New CID**
LS500 & LS500h	18	8934F500**904**	**8934F500906**
RX350 & RX450h	17 - 18	8934F481**700**	**8934F482900**
		8934F481**701**	
		8934F481**800**	**8934F483000**
		8934F481**801**	
RX350L & RX450hL	17 - 18	8934F482**201**	**8934F483100**
		8934F482**301**	**8934F483200**
NX300 & NX300h	18	8934F780**302**	**8934F780303**
		8934F780**402**	**8934F780403**
		8934F780**502**	**8934F780503**

Note: If the Advance Parking Guidance/ICS/Intuitive P/A system has already been calibrated with the new CID, the campaign is complete.

VIII. COMPLETE REPAIR

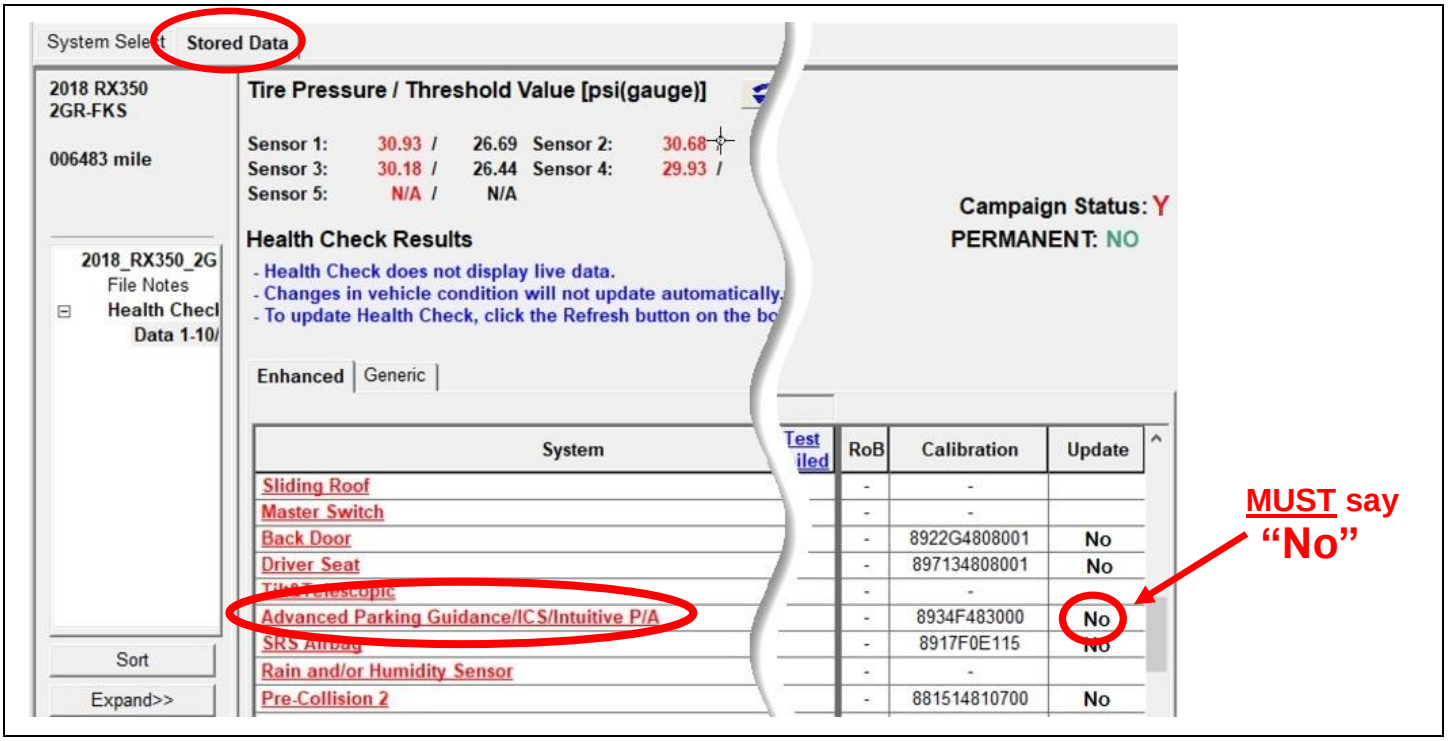
1. **PERFORM VERIFICATION HEALTH CHECK**
   a. Using a Techstream, perform a Health Check.
   b. Clear DTC's that may have set during the re-flash procedure.
   c. **Re-run the Health Check to confirm that no DTC's reappear.**

THIS VERIFICATION HEALTH CHECK IS NECESSARY to update the results and CID's to the National database.

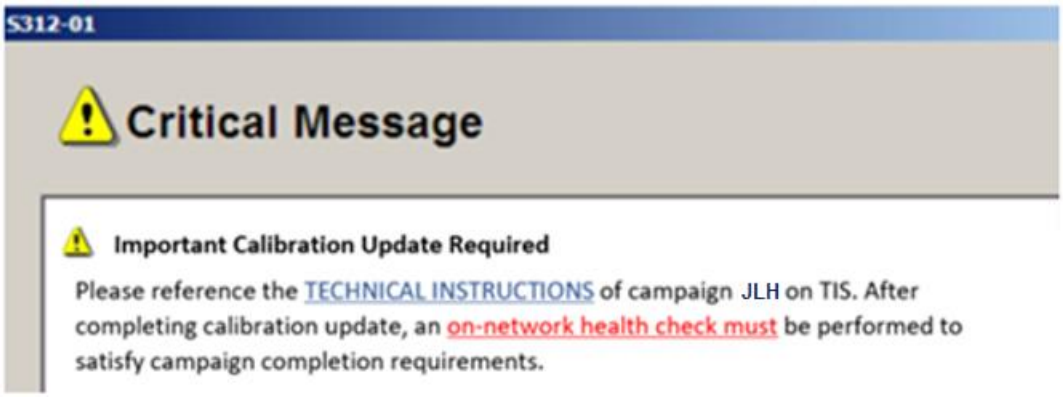
2. CONFIRM CID UPDATE

a. On the Stored Data tab, confirm the following for the Advanced Parking Guidance/ICS/Intuitive P/A ECU:

- **The Update column lists "No"**

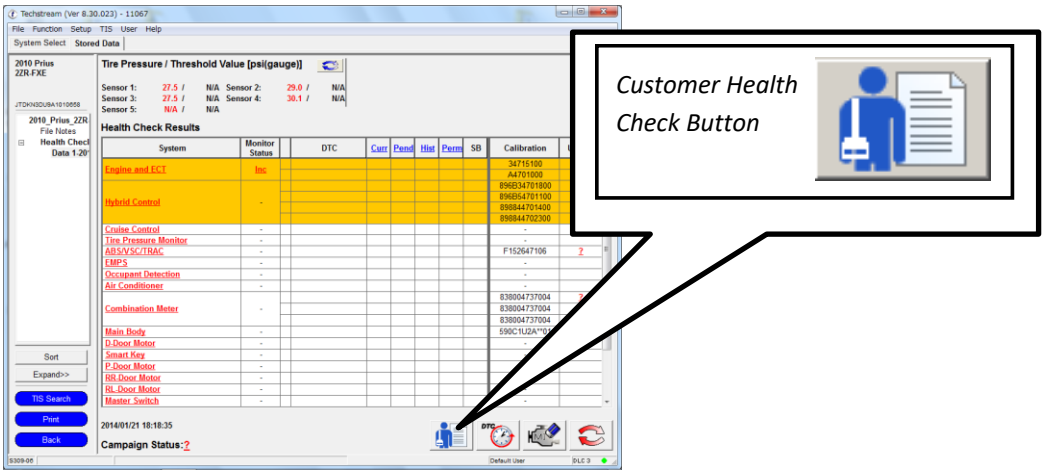


Note: If you receive the following message **after** the Verification Health Check, you have not properly completed the Required Calibration Updates!!

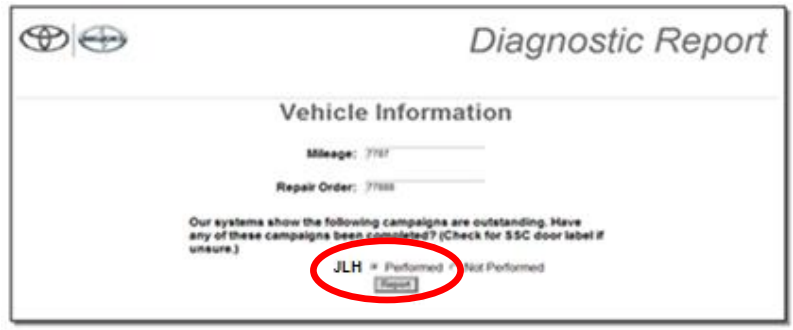


3. PRINT CUSTOMER HEALTH CHECK REPORT

a. From the Stored Data tab, select the Customer Health Check Report button (TIS will launch when button is pressed).



b. Log in to TIS.
c. Input Vehicle Mileage and Repair Order number.
d. Check the “Performed” campaign button for campaign JLH.
e. Select the Report button.



f. Confirm Customer Health Check Report information is correct.
g. Print Customer Health Check Report from TIS.
h. Sign and provide to the customer.

IX. REASSEMBLY

1. RESTORE CUSTOMIZED SETTINGS

a. Use a Techstream to access the following data:
   - Advance Parking Guidance/ICS/Intuitive P/A → Customize → Warning, Sensor, Display, and Others.

b. Restore the customized settings to their prior selections using the Customized Settings Sheets that you previously recorded.

2. CONNECT COOLING FAN

a. Lower the lock lever and engage the claw to connect the cooling fan motor connector.

3. INITIALIZE PKSB OR ICS SYSTEM

a. If the PKSB indicator (LS models) or ICS indicator (RX & NX models) blinks after reflash, perform steering sensor zero point calibration.

LS 500		**2018**
LS 500h		**2018**
RX 350	**2017**	**2018**
RX 450h	**2017**	**2018**
RX 350L		**2018**
RX 450hL		**2018**
NX 300		**2018**
NX 300h		**2018**

4. REMOVE THE POWER SUPPLY FROM THE BATTERY

◄ VERIFY REPAIR QUALITY ►

- **Verify the operation of the cooling fans**
- **Confirm the system Calibration has been updated successfully.**
- **Confirm there are no DTC's after the Calibration update.**

X. APPENDIX

A. CUSTOMIZED SETTING SHEET (for LS500 & LS500h)

a) Techstream: Warning

Function	Settings (Put a check into applicable setting.)				
Fr Corner Sensor Onset Range	☐ Short	☐ Long			
Rr Corner Sensor Onset Range	☐ Short	☐ Long			
Fr Sensor Onset Range	☐ Narrow	☐ Wide			
Rr Sensor Onset Range	☐ Narrow	☐ Wide			
Keep Sense Buzzer	☐ Not Avail	☐ Avail			
Fr & Rr Buzzer Volume	☐ L	☐ M	☐ H		
Object Not Moving 3s Buzz Vol	☐ Keep Vol	☐ L	☐ M1	☐ M2	
Leave Buzzer Volume	☐ Keep Vol	☐ L	☐ M1	☐ M2	
Temporary Mute Reset Speed Adjust	☐ System Link	☐ 15km/h	☐20km/h	☐ 30km/h	
Temporary Mute Function	☐ OFF	☐ ON			
Clearance Sonar Auto Mute Function	☐ OFF	☐ ON			
Clearance Sonar Judgement of Obstacle on Course	☐ Valid	☐ Invalid			

b) Techstream: Sensor

Function	Settings (Put a check into applicable setting.)				
Sensor Condition N	☐ Not Avail	☐ Avail			

c) Techstream: Display

Function	Settings (Put a check into applicable setting.)				
Approach Display OFF	☐ Not Avail	☐ Avail			
Display Mode	☐ All	☐ Undisp			

To be continued.

d) Techstream: Others

Function	Settings (Put a check into applicable setting.)				
ICS Function	☐ ON	☐ OFF			
ICS SW Status Memory	☐ Yes	☐ No			
ICS Stop Distance	☐ Short	☐ Long			
RCTAB Function	☐ ON	☐ OFF			
RCTAB Operation Timing Setting	☐ Late	☐ Standard			
RCTAB Sensitivity	☐ Standard	☐ Low			
Pedestrian ICS Function	☐ ON	☐ OFF			
Pedestrian ICS Target Stopping Distance	☐ Close	☐ Normal			
Pedestrian ICS Width Adjustment (Y Axis)	☐ Narrow	☐ Normal			

B. CUSTOMIZED SETTING SHEET (for RX350 & RX450h & RX350L & RX450hL)

a) Techstream: Warning

Function	Settings (Put a check into applicable setting.)				
Fr Corner Sensor Onset Range	☐ Short	☐ Long			
Rr Corner Sensor Onset Range	☐ Short	☐ Long			
Fr Sensor Onset Range	☐ Narrow	☐ Wide			
Rr Sensor Onset Range	☐ Narrow	☐ Wide			
Keep Sense Buzzer	☐ Not Avail	☐ Avail			
Fr & Rr Buzzer Volume	☐ L	☐ M1	☐ M2	☐ M3	☐ H
Object Not Moving 3s Buzz Vol	☐ Keep Vol	☐ L	☐ M1	☐ M2	
Leave Buzzer Volume	☐ Keep Vol	☐ L	☐ M1	☐ M2	
Temporary Mute Reset Speed Adjust	☐ System Link	☐ 15km/h	☐20km/h	☐ 30km/h	
Temporary Mute Function	☐ OFF	☐ ON			

b) Techstream: Sensor

Function	Settings (Put a check into applicable setting.)				
Sensor Condition N	☐ Not Avail	☐ Avail			

c) Techstream: Display

Function	Settings (Put a check into applicable setting.)				
Approach Display OFF	☐ Not Avail	☐ Avail			
Display Mode	☐ All	☐ Undisp			

d) Techstream: Others

Function	Settings (Put a check into applicable setting.)				
ICS Function	☐ ON	☐ OFF			
ICS SW Status Memory	☐ Yes	☐ No			
ICS Stop Distance	☐ Short	☐ Long			
RCTAB Function	☐ ON	☐ OFF			
RCTAB Operation Timing Setting	☐ Late	☐ Standard			
RCTAB Sensitivity	☐ Standard	☐ Low			

C. CUSTOMIZED SETTING SHEET (for NX300 & NX300h)

a) Techstream: Warning

Function	Settings (Put a check into applicable setting.)				
Fr Sensor Onset Range	☐ Narrow	☐ Wide			
Rr Sensor Onset Range	☐ Narrow	☐ Wide			
Keep Sense Buzzer	☐ Not Avail	☐ Avail			
Fr & Rr Buzzer Volume	☐ L	☐ M1	☐ M2	☐ M3	☐ H
Object Not Moving 3s Buzz Vol	☐ Keep Vol	☐ L	☐ M1	☐ M2	
Leave Buzzer Volume	☐ Keep Vol	☐ L	☐ M1	☐ M2	
Temporary Mute Reset Speed Adjust	☐ System Link	☐ 15km/h	☐20km/h	☐ 30km/h	
Temporary Mute Function	☐ OFF	☐ ON			

b) Techstream: Sensor

Function	Settings (Put a check into applicable setting.)				
Sensor Condition N	☐ Not Avail	☐ Avail			

c) Techstream: Display

Function	Settings (Put a check into applicable setting.)				
Approach Display OFF	☐ Not Avail	☐ Avail			

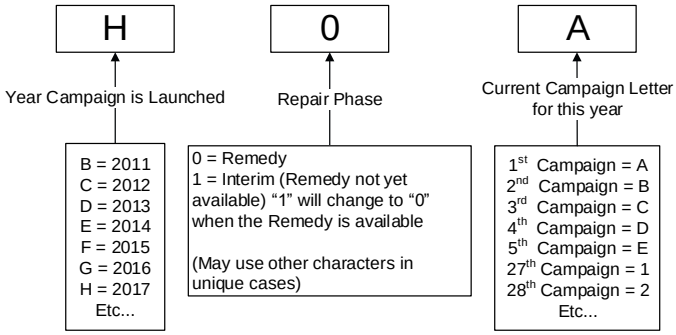
d) Techstream: Others

Function	Settings (Put a check into applicable setting.)				
ICS Function	☐ ON	☐ OFF			
ICS SW Status Memory	☐ Yes	☐ No			
ICS Stop Distance	☐ Short	☐ Long			

A. PARTS DISPOSAL

As required by Federal Regulations, 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 DECORDER



Examples:

C1B = Launched in 2012, Interim Phase, 2nd Campaign Launched in 2012
E0A = Launched in 2014, Remedy Phase, 1st Campaign Launched in 2014
H0A = Launched in 2017, Remedy Phase, 1st Campaign Launched in 2017.