TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL 20TA10

HYBRID SYSTEM SOFTWARE UPDATE

CERTAIN 2013 - 2015 PRIUS

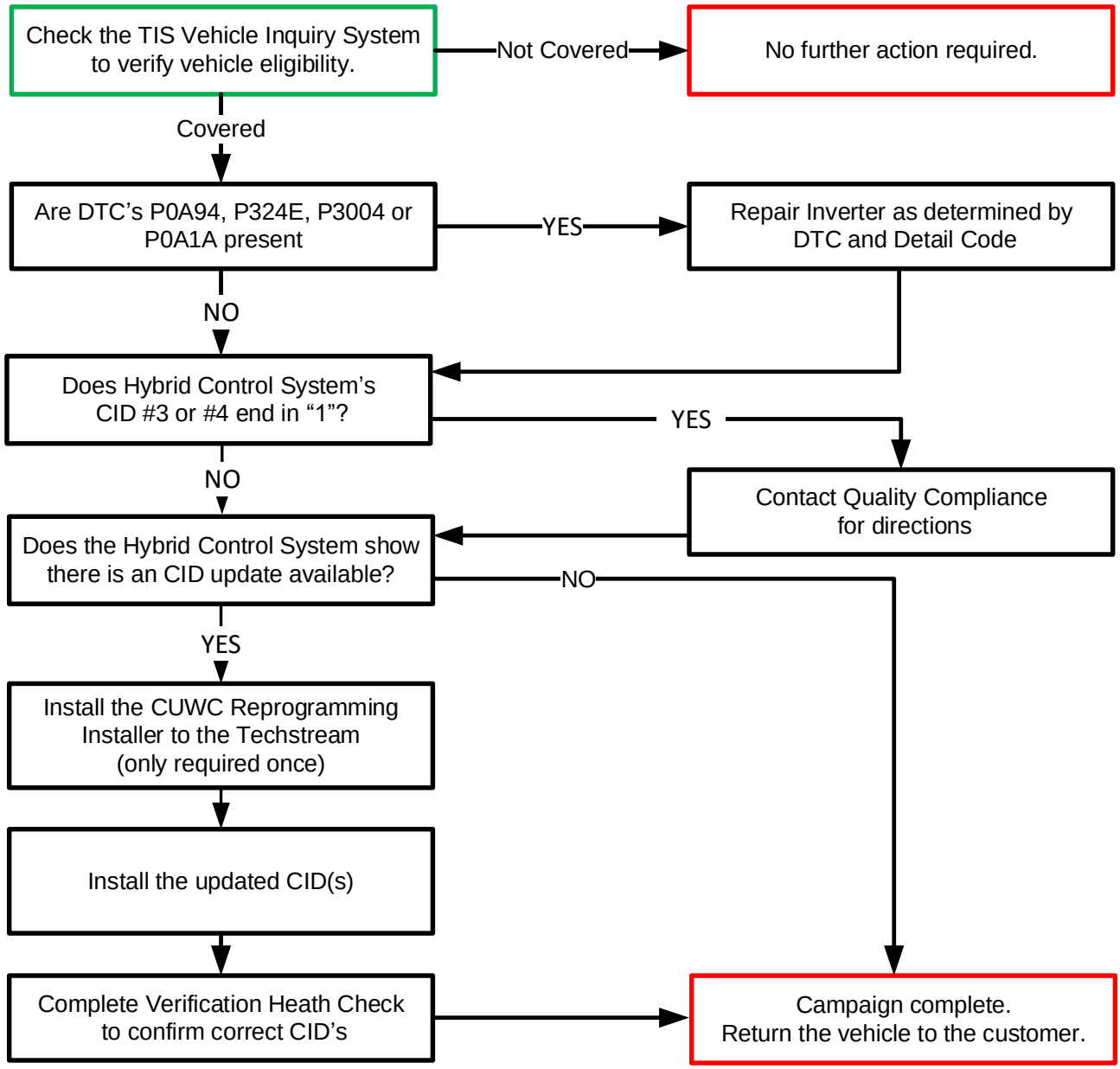
Prius V Technical Instructions are in a separate document

The repair quality of covered vehicles is extremely important to Toyota. 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:

- **Expert Technician (Hybrid)**
- **Master Technician**
- **Master Diagnostic Technician**

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

1. CHECK VEHICLE FOR CAMPAIGN ELIGIBILITY

a. Compare the vehicles VIN to the VIN listed on the Repair Order to ensure they match.

b. Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Campaign, and that it has not already been completed.

Note: 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

1. PARTS

Part Number	Part Description	Quantity
00451-00001-LBL*	Authorized Modification Label	1

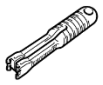
*****Labels can be ordered in packs of 25 from the MDC through the Dealer Daily Website

2. TOOLS, SUPPLIES & EQUIPMENT

- Standard Hand Tools
- Techstream 2.0 / Techstream Lite with software version 13.30 or greater installed
- GR8 Battery Diagnostic Station
- T-SB-0134-16

SST – These Special Service Tools required for this repair:

Part Number	Tool Name	Quantity
09891-47020	Inverter Case Separator	1
Campaign tool	Joint Fuse removal tool	1

Joint Fuse Removal Tool


The fuse removal tools were shipped to the dealers for a previous campaign.

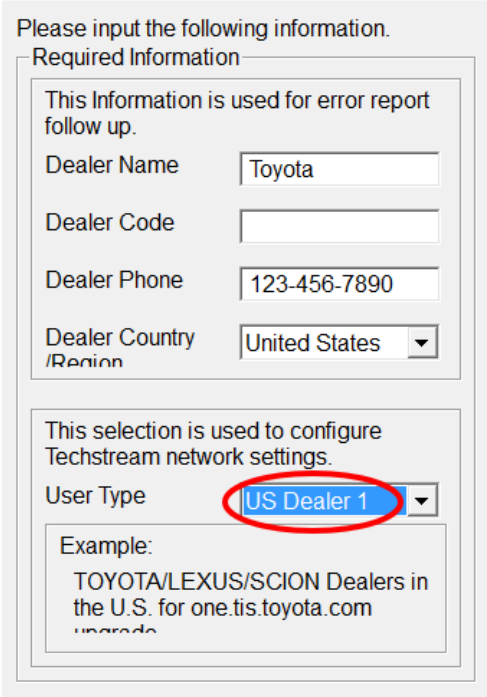
IV. BACKGROUND

The involved vehicles were designed to enter a failsafe driving mode in response to certain hybrid system faults. Toyota has found that in rare situations, the vehicle may not enter a fail-safe driving mode as intended. If this occurs, the vehicle could lose power and stall. While power steering and braking would remain operational, a vehicle stall while driving at higher speeds could increase the risk of a crash.

V. INSPECT INVERTER CONDITION

1. Verify Techstream Configuration

a. From the menu at the top of the screen, select: Setup / Techstream Configuration.
b. Continue to the third setup screen: Required Information.
c. Verify that “US Dealer 1” is selected as the User Type.

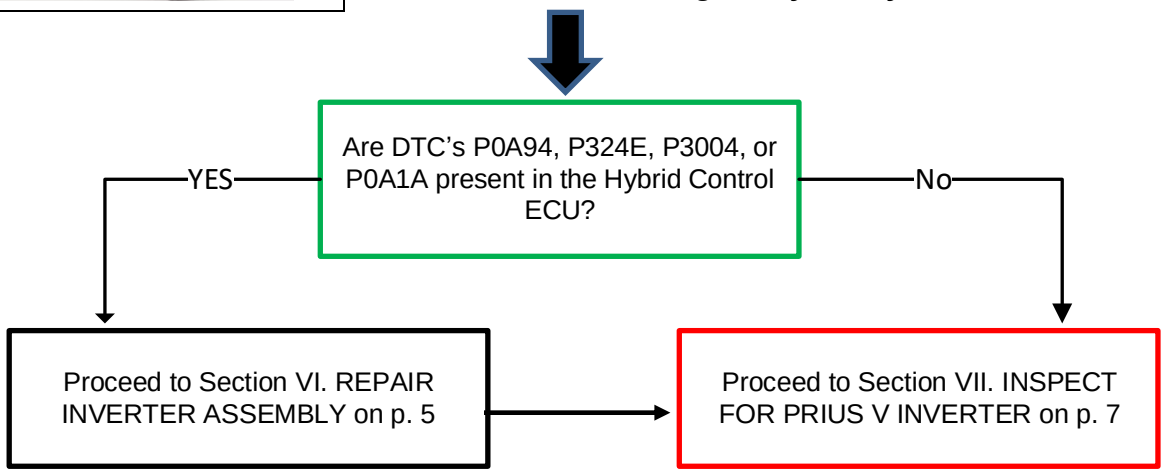


2. PERFORM HEALTH CHECK

a. Using a Techstream, perform a Health Check.

STOP **If any hybrid DTC’s are found that indicate a safety risk at performing this repair, do not proceed until they have been resolved.**

Note: This Safety Recall covers only the specified ECU updates and Inverter repairs, as detailed in these instructions. It does not cover the diagnosis or replacement of any other parts on the vehicle, including the hybrid system.



VI. REPAIR INVERTER ASSEMBLY

Note: Repairing the inverter is required only if DTC's P0A94, P324E, P3004 or P0A1A are present. If these DTC's are not present, skip to section VII. Inspect for Prius V Inverter on page 7.

1. DETERMINE REPAIR COMPONENTS BASED ON DTC DETAIL CODE

a. If multiple DTCs are present, save the freeze frame data.
b. After saving the freeze frame data, clear codes and confirm what DTCs reset.
c. If multiple codes return, follow the repair manual diagnosis procedure for the DTC with Freeze Frame Data Occurrence Order value of "1".
d. Use the correct table on the following pages to identify the parts required for repair, the correct parts are listed in the bottom row of each table.

DTC	DTC DETAIL CODE	• IPM	• MG-ECU	• MG-ECU • IPM	• MG-ECU • CURRENT SENSOR • IPM	• INVERTER ASSY
P0A94	127			X		
	172	X				
	442			X		
	547		X			
	548				X	
	549		X			
	550			X		
	553	X				
	554		X			
	555				X	
	556		X			
	557	X				
	564			X		
	585			X		
	587			X		
	589			X		
	590			X		
P324E	788				X	
P0A1A	151				X	
	155		X			
	156		X			
	166		X			
	200		X			
	658		X			
	659		X			
	791		X			
	792		X			
	793		X			
P3004	131					X
	132					X
	800	X				
	801	X				
PARTS & QUANTITY (QTY)		04899-47021 (1) 08887-02809 (2) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1)	G920H-47150 (1) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1)	04899-47021 (1) 08887-02809 (2) G920H-47150 (1) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1)	04899-47021 (1) 08887-02809 (2) G920H-47150 (1) G920J-52010 (1) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1)	ORDER INVERTER BY VIN

Thermal grease for IPM replacement is NOT interchangeable. Only grease specified for the Prius inverter can be used. Grease for the Highlander IPM replacement will result in inverter failure if used.

2. **TO REPAIR THE INVERTER, CLICK ON THE RELEVANT LINK BELOW:**

   2013 Prius: Intelligent Power Module Transistor Removal

   2014 Prius: Intelligent Power Module Transistor Removal

   2015 Prius: Intelligent Power Module Transistor Removal

3. **ONCE THE INVERTER REPAIR IS COMPLETED, CONTINUE TO THE NEXT SECTION.**

VII. INSPECT FOR PRIUS V INVERTER

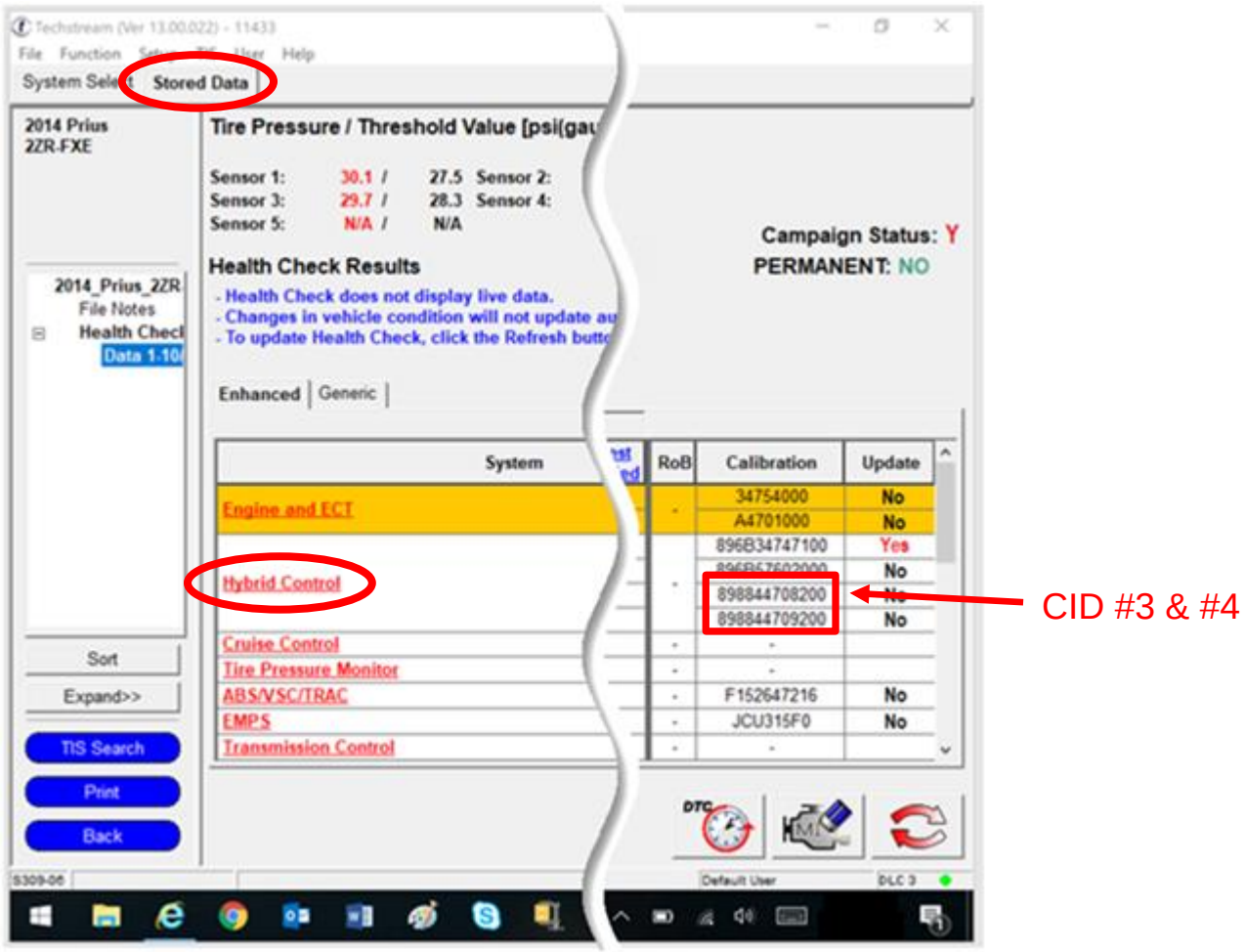
1. INSPECTION OF HYBRID CONTROL CID'S #3 & #4

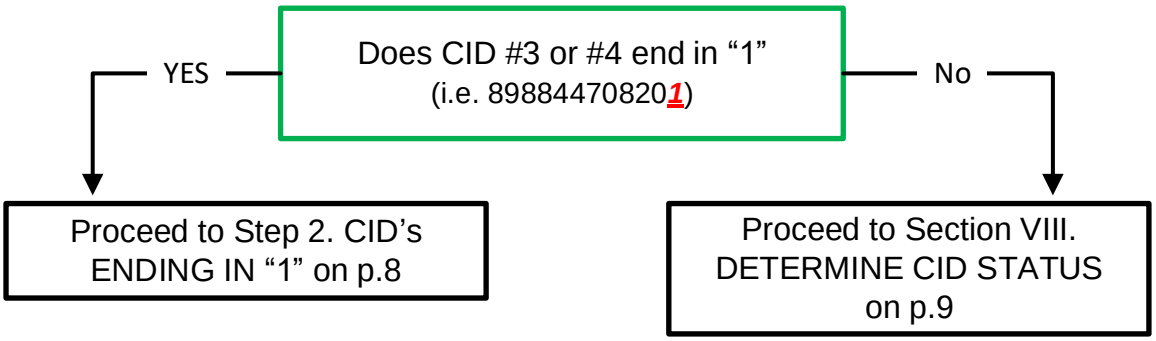
a. Identify the Hybrid Control CID #3 & #4 from the Stored Data tab.

b. Determine if the last digit of CID #3 & #4 is a "0" or a "1".

For example: CID 898844708200, has the last digit of "0".
CID 898844708201, has the last digit of "1".

Note: The actual CID's will vary, and may not be the same CID as the example.





2. CID's ENDING IN "1"

It may be necessary to determine if a Prius has been incorrectly repaired with a Prius V inverter or Motor Generator (MG) ECU in the past. This condition may be identified by reviewing the Hybrid Control System CIDs #3 & #4. If the #3 and #4 CIDs end in a "1" instead of a "0", this may indicate that Prius V components were installed in a Prius vehicle.

This mismatch of CID's will create an error message when performing 20TA10 and will prevent its completion. To address this situation, the vehicle must be repaired using parts that are correct for a Prius.

If the vehicle requires replacement of the Inverter or MG ECU because Prius V parts are installed, it will be necessary to contact Quality Compliance for direction.

Please check Toyota National Service History (NSH) to determine if the Prius V inverter or MG ECU was installed at a Toyota dealership. The following part numbers would confirm the issue:

- G9200-49056 Prius V Inverter Assembly
- G920H-47040 Prius V Motor Generator ECU

Email Quality Compliance with the following information to determine the repair direction:

Email address: quality_compliance@toyota.com
Email subject: 20TA10 Inverter/MG ECU Request
Email contents:

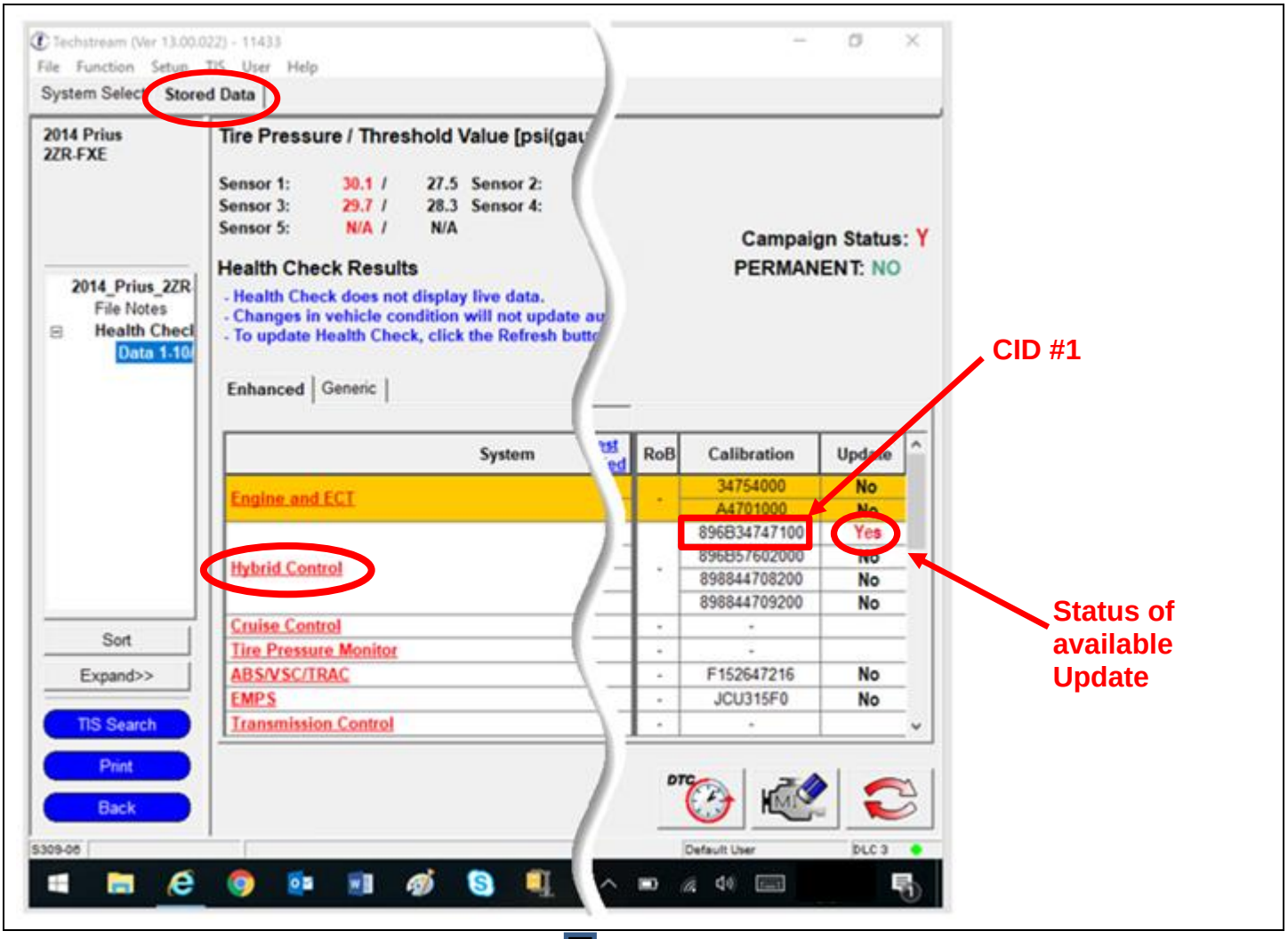
- VIN #
- Screenshot of Hybrid Control CID's
- RO# and date of previous Inverter or MG ECU replacement in NSH (if found).
- Part number of Inverter or MG ECU replacement in NSH (if found).
- Technicians Name and contact number.

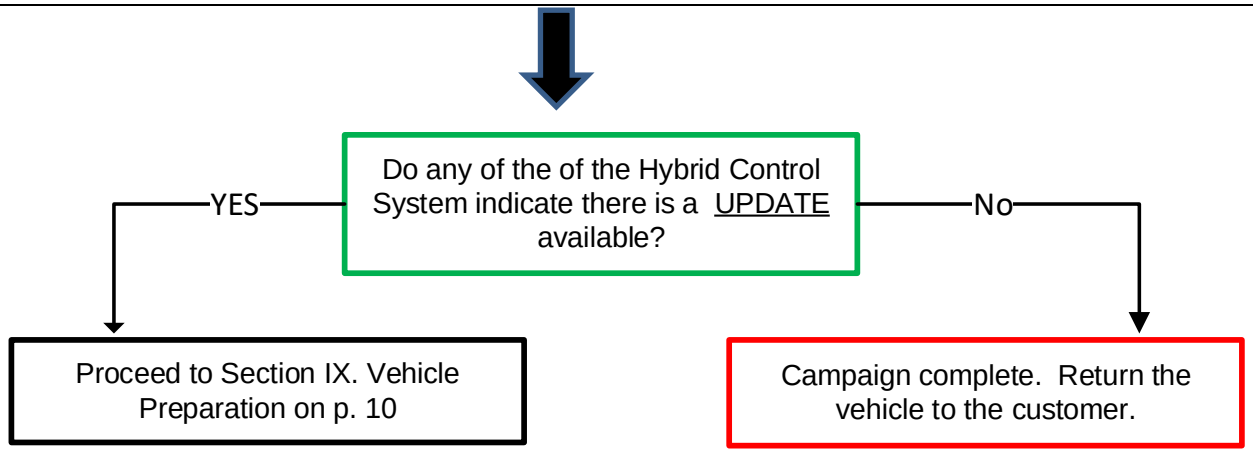
VIII. DETERMINE CID STATUS

1. DETERMINE STATUS of HYBRID CONTROL SYSTEM CID's

a. Locate the Update column for the Hybrid Control System in the Stored Data tab.

b. Determine the status of the **CID #1** for the Hybrid Control ECU; indicated by a **YES** or **NO** in the Update column.





If the Update Column listed "No" in the location specified above, no further action is necessary. The campaign is now completed. The vehicle can be returned to the customer.

IX. VEHICLE PREPARATION

The ECU reprograming procedure is detailed in T-SB-0134-16. Reference this Bulletin for additional detailed procedures and information.

3. VEHICLE BASICS

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. Headlights, wipers, climate control, audio system, etc.)

4. CONNECT THE 12v BATTERY TO A POWER SUPPLY

a. Connect the DCA-800, GR8 or other type of a power supply (not a battery charger) to the 12v battery.

b. Activate the Power Supply Mode.

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 NOT the remote jump posts under the hood (if equipped).

5. VERIFY TECHSTREAM SETUP

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

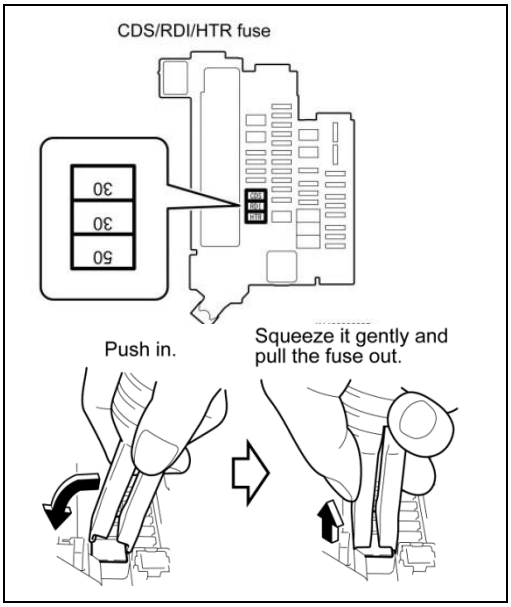
The Techstream battery must be maintained during the update procedure. If necessary, plug the Techstream into a 120v outlet to ensure that a failure does not occur.

Note: If the Techstream communication with the vehicle fails during the re-flash procedure, the ECU will be damaged and must be replaced.

6. MAINTAIN BRAKE SYSTEM PRESSURE

a. Depress the brake pedal fully 2 times within 2 seconds.

Note: You may hear the hydro-boost pump run for a few seconds when completing these steps. This procedure will prevent the pump from running during the calibration update procedure.



7. REMOVE JOINT FUSE FROM ENGINE ROOM FUSE BOX

a. Confirm the joint fuse orientation before removal because the fuse can be installed in either direction.

b. Using the fuse puller remove the joint fuse that encases the CDS (30A), RDI (30A) and HTR (50A).

STOP

STOP

Permanent damage to the ECU's can happen if these fuses are not removed.

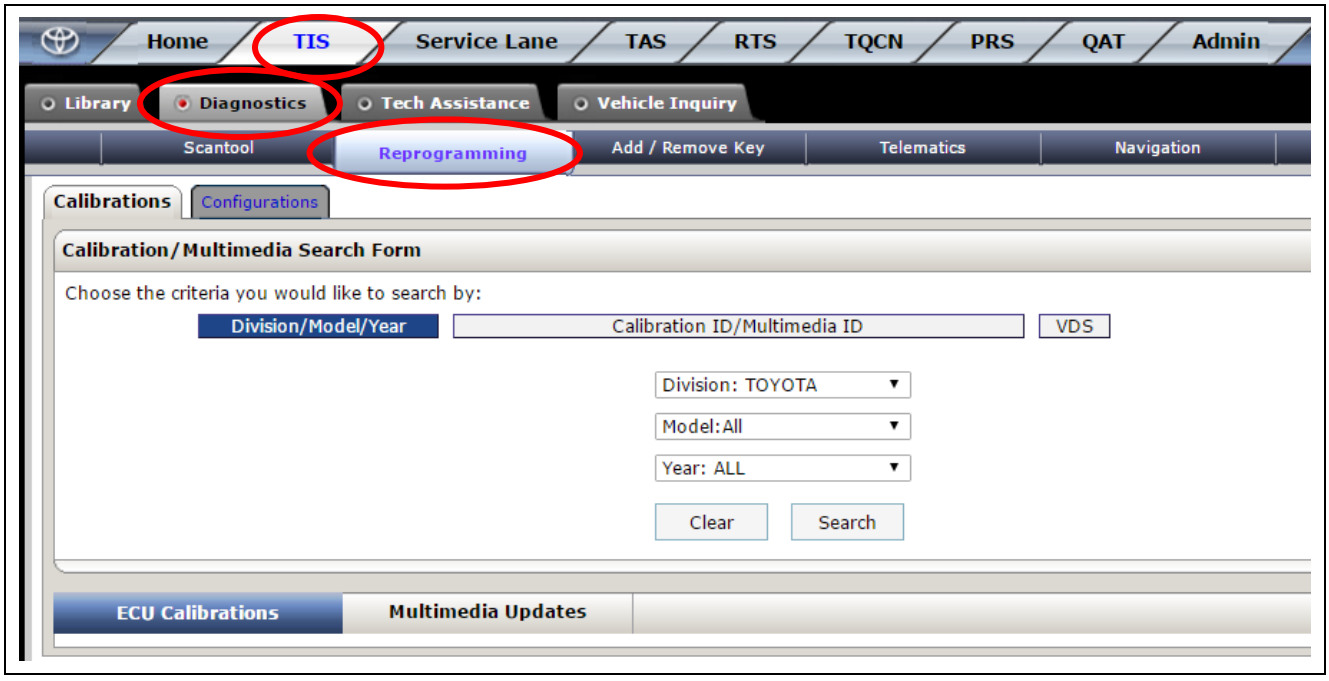
Removing these fuses will stop the vehicle from performing onboard diagnostic tests during the update, which could cause the update to fail and damage the ECU.

X. CUWC APPLICATION

1. INSTALL CUWC FILE INSTALLER (Only required once for each Techstream)

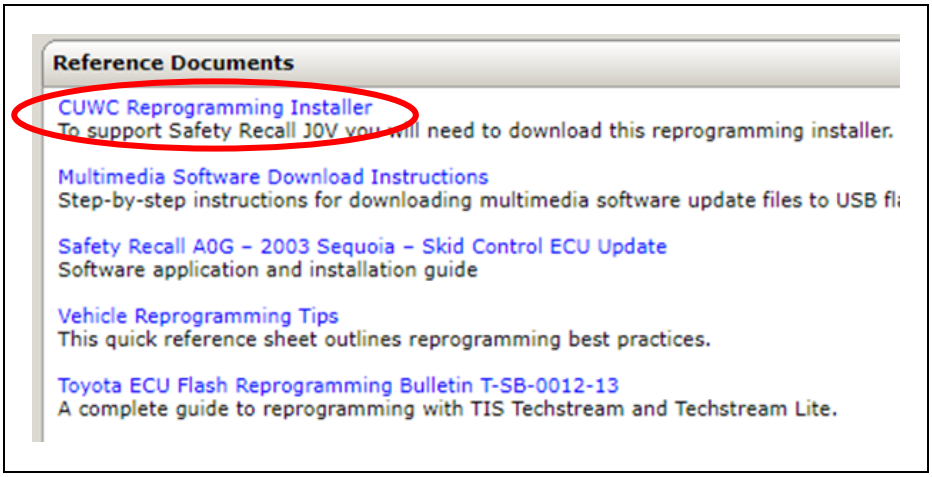
a. In TIS, select the following:

- TIS / Diagnostics / Reprograming



b. On the right side of the screen, select the following from the Reference Documents:

- CUWC Reprogramming Installer
- Follow the on-screen instructions to complete the installation.



Note: The installation of the CUWC Reprograming Installer will only need to be completed one time for each Techstream.

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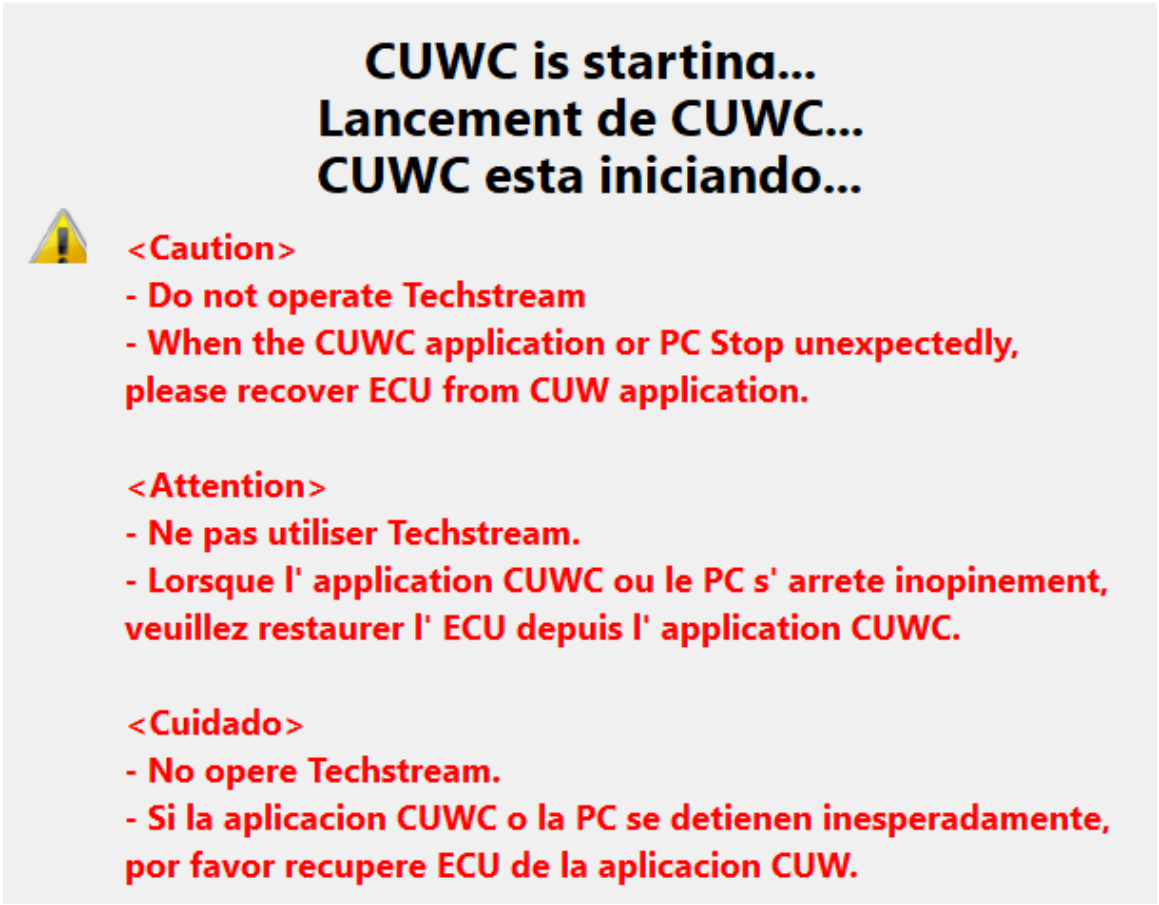
Permanent damage to the ECU's will occur if the following actions are attempted during the CID update procedure:

- Attempt to close the CUWC installer
- Attempt to close the Calibration Wizard
- Turning off the vehicle's ignition
- Turning off the Techstream Unit
- Unplugging the Techstream from the vehicle while programing in in process

The following message will appear when the CUWC installation application is running. This image cannot be closed manually**. When the installation of all necessary CID's is complete, the image will close**.

Message displayed during CID update process:

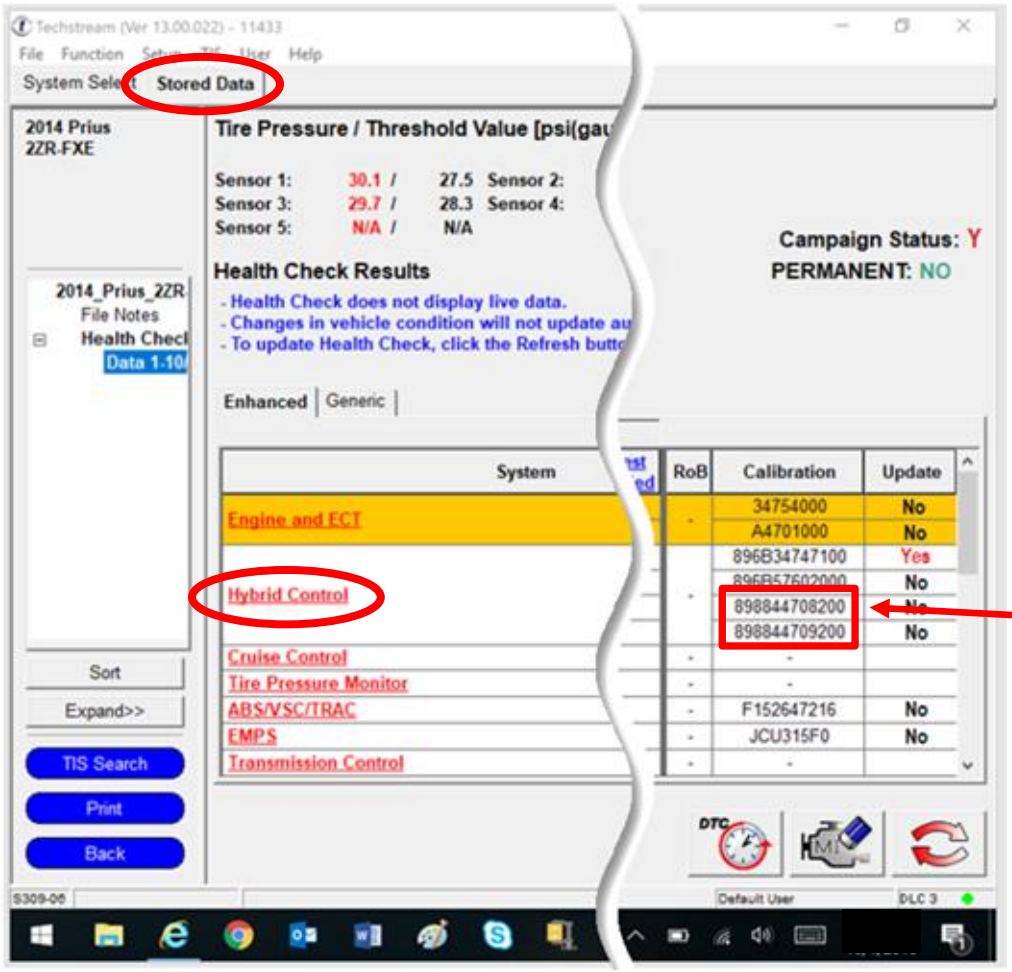


XI. CID INSTALLATION

1. INSTALLATION OF CID'S

Note: Since there are multiple CID groups available, it will be necessary to identify the correct group by referencing CID's #3 & #4.

a. Identify the Hybrid Control CID #3 & #4 from the Stored Data tab.
b. Referencing the correct model year in the chart's below, identify the chart that has the correct CID #3 & #4.
c. Select the Group # link (blue text) to begin the update process.
d. Follow the instruction on the screen to complete the installation.



Year	CID#	Original	Current
2013 Prius	CID #1	896B34736000 896B34736100 896B34736200 896B34736300	**2013 Prius #1** CID #1: 896B34736400 CID #2: 896B57602000 CID #3: 898844701400 CID #4: 898844702300
	CID #2	896B57602000	
	CID #3	89884470***1200*** 89884470***1300*** 89884470***1400***	
	CID #4	89884470***2100*** 89884470***2200*** 89884470***2300***	

2013 Prius	CID #1	896B34736000 896B34736100 896B34736200 896B34736300	**2013 Prius #2** CID #1: 896B34736400 CID #2: 896B57602000 CID #3: 898844708200 CID #4: 898844709200
	CID #2	896B57602000	
	CID #3	89884470***8000*** 89884470***8100*** 89884470***8200***	
	CID #4	89884470***9000*** 89884470***9100*** 89884470***9200***	

Prius V Technical Instructions are in a separate document

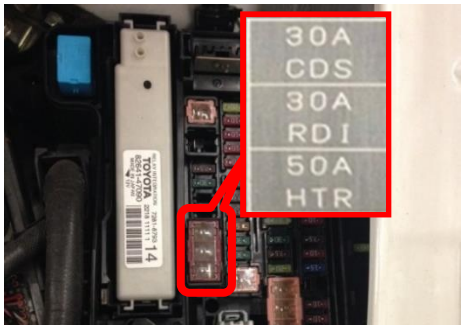
(cont. on next page)

Year	CID#	Original	Current
2014 - 2015 Prius	CID #1	896B34747000 896B34747100 896B34747200	**2014-2015 Prius #1** CID #1: 896B34747300 CID #2: 896B57602000 CID #3: 898844701400 CID #4: 898844702300
	CID #2	896B57602000	
	CID #3	89884470***1200*** 89884470***1300*** 89884470***1400***	
	CID #4	89884470***2100*** 89884470***2200*** 89884470***2300***	

2014 - 2015 Prius	CID #1	896B34747000 896B34747100 896B34747200	**2014-2015 Prius #2** CID #1: 896B34747300 CID #2: 896B57602000 CID #3: 898844708200 CID #4: 898844709200
	CID #2	896B57602000	
	CID #3	89884470***8000*** 89884470***8100*** 89884470***8200***	
	CID #4	89884470***9000*** 89884470***9100*** 89884470***9200***	

Prius V Technical Instructions are in a separate document

XII. COMPLETE UPDATE



1. **REINSTALL JOINT FUSE INTO ENGINE ROOM FUSE BOX**
   a. Confirm the joint fuse orientation before reinstalling because the joint fuse can be installed in either direction.
   b. Reinstall the joint fuse that encases the CDS (30A), RDI (30A) and HTR (50A).

STOP **BE SURE TO ORIENT THE FUSE AS SHOWN ON THE FUSE BLOCK COVER.**

2. PERFORM VERIFICATION HEALTH CHECK

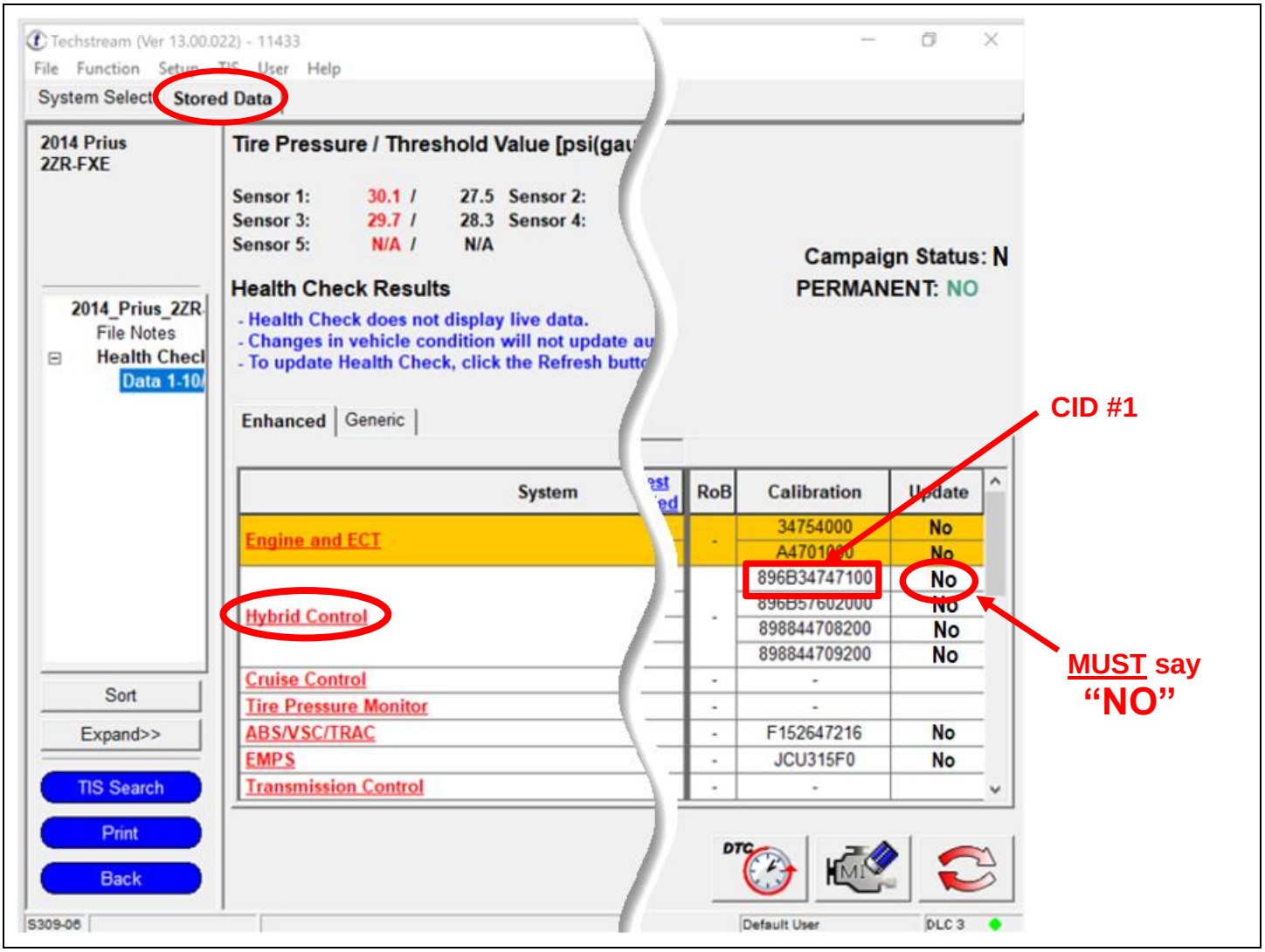
a. Using a Techstream, perform a Health Check.
c. Clear DTC's that may have set during the re-flash procedure.
d. **Re-run the Health Check to confirm that no DTC's reappear.**

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

3. CONFIRM CID UPDATE

a. On the Stored Data tab, confirm the following for the Hybrid Control System:

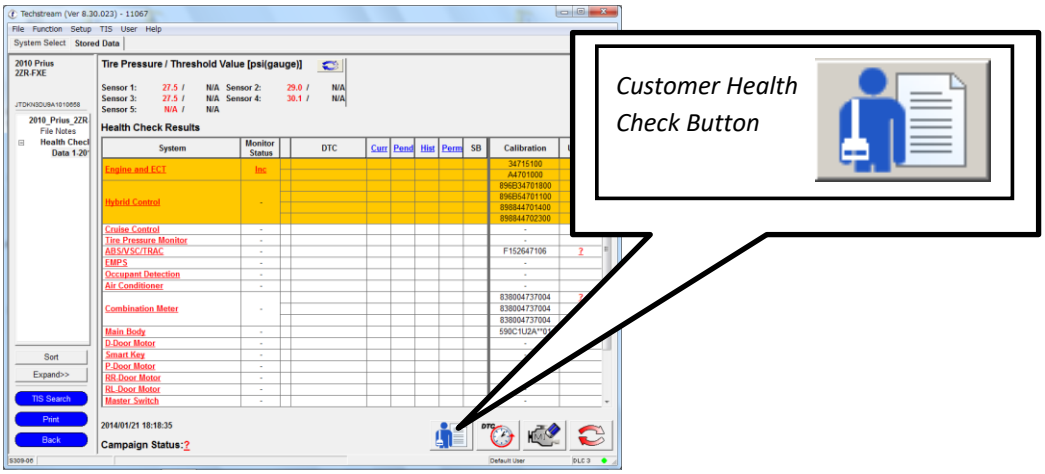
- **The Update column lists "No" for CID #1**



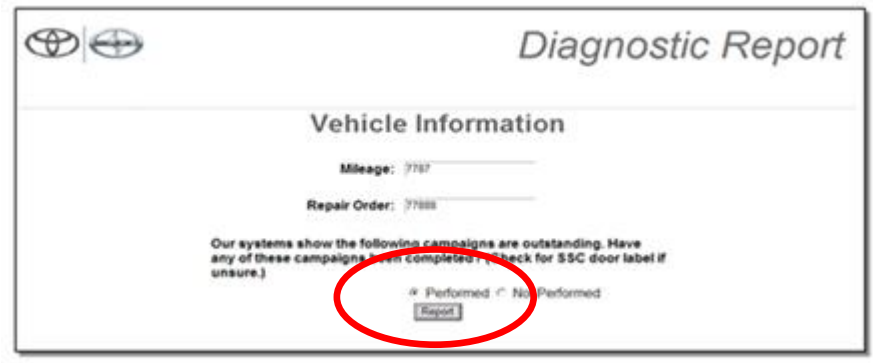
STOP	**It is recommended to have this step verified by someone other than the individual who performed the update.**

4. PRINT CUSTOMER HEALTH CHECK REPORT

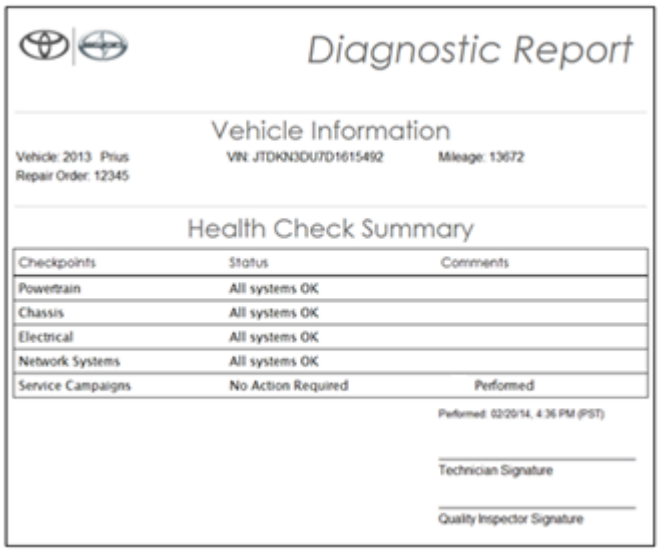
a. From the Stored Data tab, select the Customer Health Check Report button (TIS will launch when button is pressed).



b. Log in to TIS.
c. Input Vehicle Mileage and Repair Order number.
d. Check the “Performed” campaign button for campaign 20TA08.
e. Select the Report button.



f. Confirm Customer Health Check Report information is correct.

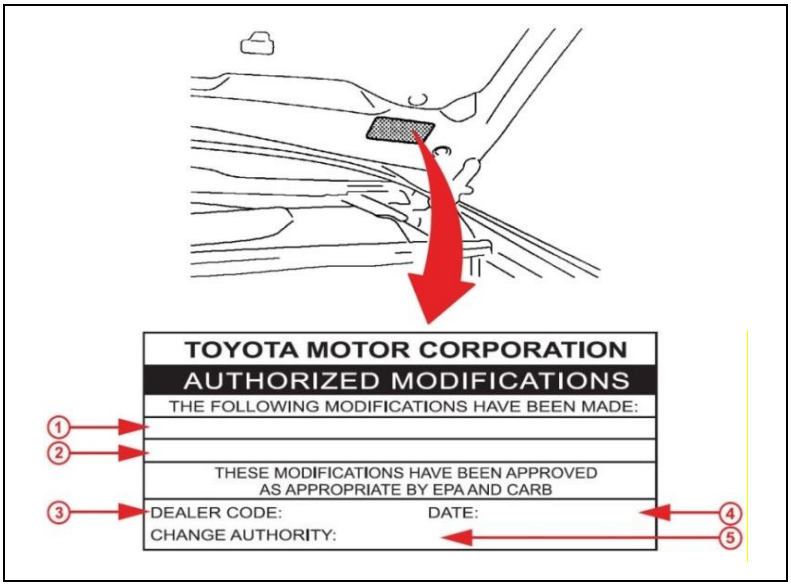


g. Print Customer Health Check Report from TIS.
h. Sign and provide to the customer.

5. ATTACH THE AUTHORIZED VEHICLE MODIFICATION LABEL

a. Fill out the label.

b. Affix the label to the under-side of the hood.



1	**Hybrid Control System**
2	(Calibration ID's)
3	(Dealer Code)
4	(Date Completed)
5	**Safety Recall 20TA10**

Calibration ID's listed for the Hybrid Control System after completing the final Health Check. The CID's will vary for car to car.

Hybrid Control	896B34747100
	896B57602000
	898844708200
	898844709200

◄ VERIFY REPAIR QUALITY ►

- **Confirm all ECM Calibration has been updated successfully to the NEW CID's.**
- **Confirm that the Authorized Modification Label has been installed.**

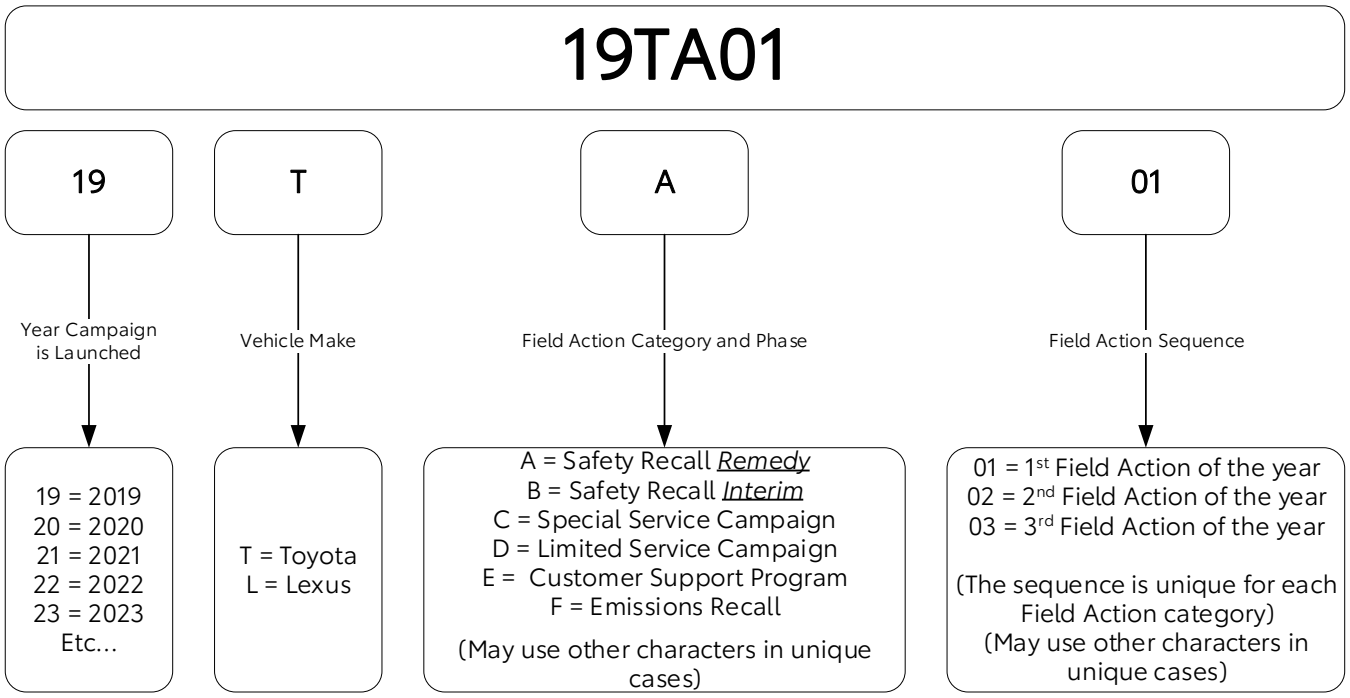
If you have any questions regarding this Safety Recall, please contact your regional representative

XIII. APPENDIX

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:

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