IMPORTANT UPDATE

TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL J0V

HYBRID SYSTEM SOFTWARE UPDATE

CERTAIN:
2012-2014 PRIUS V

Technical Instructions for the 2010-2014 Prius are in a separate document

Update 12.21.2018: The Calibration Verification Check has been removed until further notice.

Update 1.17.2019: The Calibration Verification Check has been reactivated.

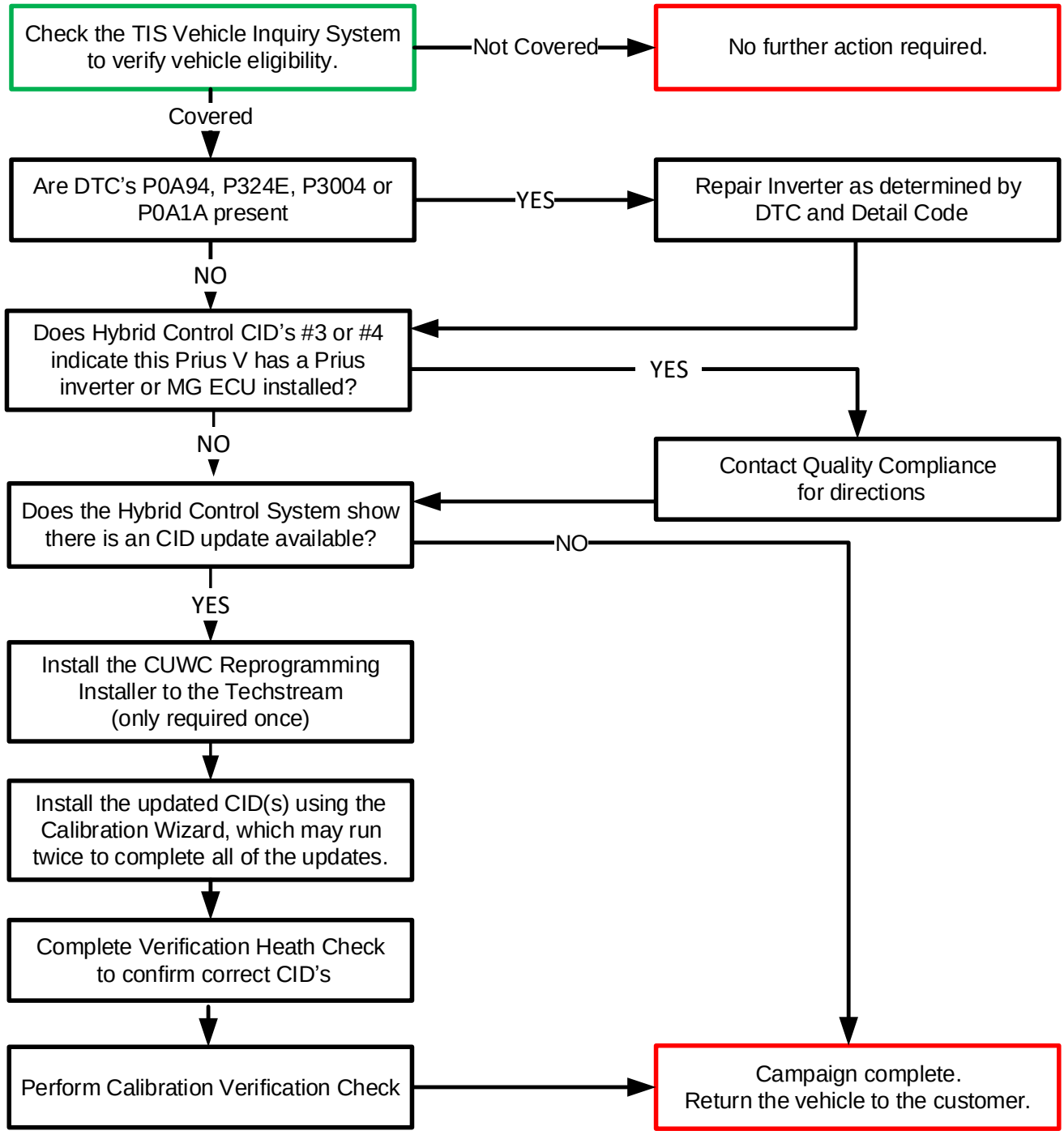
Update 8.29.2019: Additional details provided for CID identification (p. 8) and Calibration Verification Check (p. 19).

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

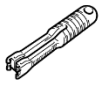
*****Labels can be ordered in packs of 25 from the MDC through the Dealer Daily Website

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. Additional tools will also be sent.

IV. BACKGROUND

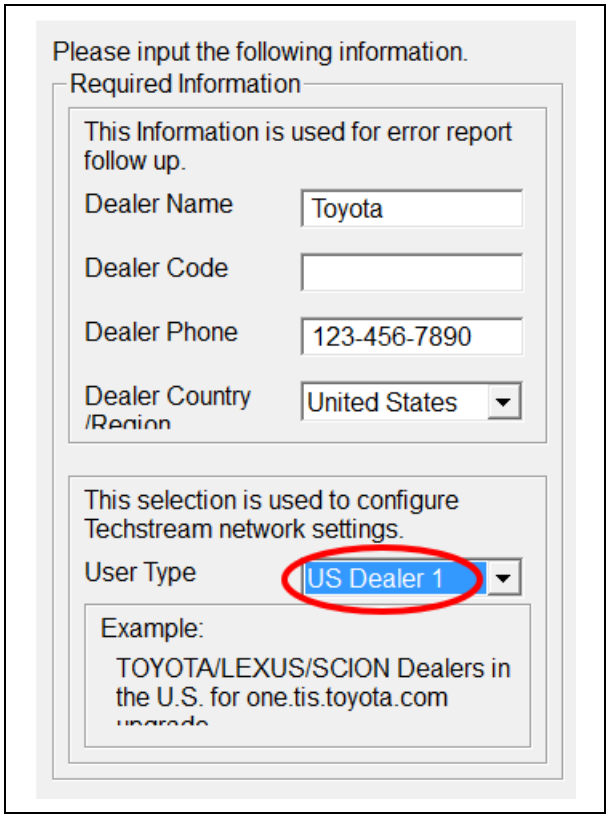
The involved vehicles were designed to enter a failsafe driving mode in response to certain hybrid system faults. Toyota has found that in rare situations, the vehicle may not enter a failsafe driving mode as intended. If this occurs, the vehicle could lose power and stall. While power steering and braking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

This recall remedy will address a new condition in the vehicles involved in previous Safety Recall F0R. The previous recall did not anticipate the new condition remedied with this recall.

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.

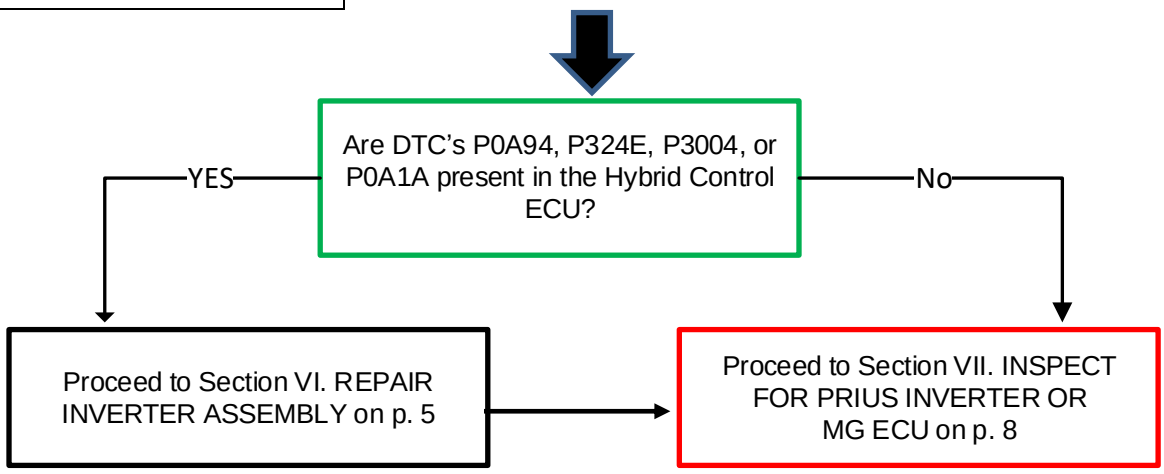


2. PERFORM HEALTH CHECK

a. Using a Techstream, perform a Health Check.

STOP	**If any hybrid DTCs are found that indicate a safety risk while 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.

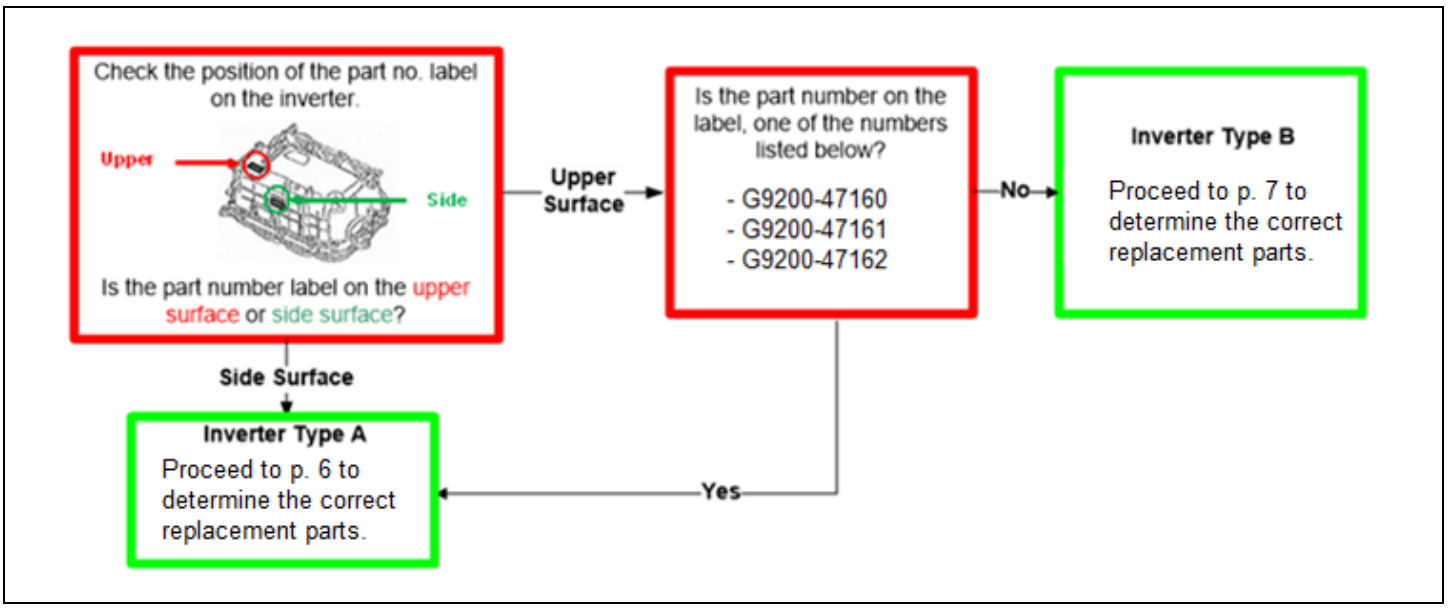


VI. REPAIR INVERTER ASSEMBLY

Note: Repairing the inverter is required only if DTCs P0A94, P324E, P3004 or P0A1A are present. If these DTCs are not present, skip to section VII. INSPECT FOR PRIUS INVERTER OR MG ECU on p 8.

1. DETERMINE INVERTER ASSEMBLY TYPE

a. Using the flowchart below, determine the inverter type (A or B).



2. DETERMINE REPAIR COMPONENTS BASED ON DTC DETAIL CODE AND INVERTER TYPE

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 below to identify the parts required for repair, the correct parts are listed in the bottom row of each table.

TYPE A

DTC	DTC DETAIL CODE	IPM REPLACEMENT	• MG-ECU • CURRENT SENSOR • IPM • INVERTER WIRE HARNESS	INVERTER ASSY
P0A94	127		X	
	172	X		
	442		X	
	547			
	548		X	
	549			
	550		X	
	553	X		
	554			
	555		X	
	556			
	557	X		
	564		X	
	585		X	
	587		X	
	589		X	
	590		X	
P324E	788		X	
P0A1A	151		X	
	155			
	156			
	166			
	200			
	658			
	659			
	791			
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-47040 (1) G920J-52010 (1) 04899-47021 (1) 08887-02809 (2) G9208-47090 (1) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1)	ORDER BY VIN

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

TYPE B

DTC	DTC DETAIL CODE	IPM REPLACEMENT	• MG-ECU • IPM	• MG-ECU • CURRENT SENSOR • IPM	INVERTER ASSY
P0A94	127		X		
	172	X			
	442		X		
	547				
	548			X	
	549				
	550		X		
	553	X			
	554				
	555			X	
	556				
	557	X			
	564		X		
	585		X		
	587		X		
	589		X		
	590		X		
P324E	788			X	
P0A1A	151			X	
	155				
	156				
	166				
	200				
	658				
	659				
	791				
	792				
	793				
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-47040 (1) 04899-47021 (1) 08887-02809 (2) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1)	G920H-47040 (1) G920J-52010 (1) 04899-47021 (1) 08887-02809 (2) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1)	ORDER BY VIN

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

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

2012 Prius V: Intelligent Power Module Transistor Removal

2013 Prius V: Intelligent Power Module Transistor Removal

2014 Prius V: Intelligent Power Module Transistor Removal

VII. INSPECT FOR PRIUS INVERTER OR MG ECU

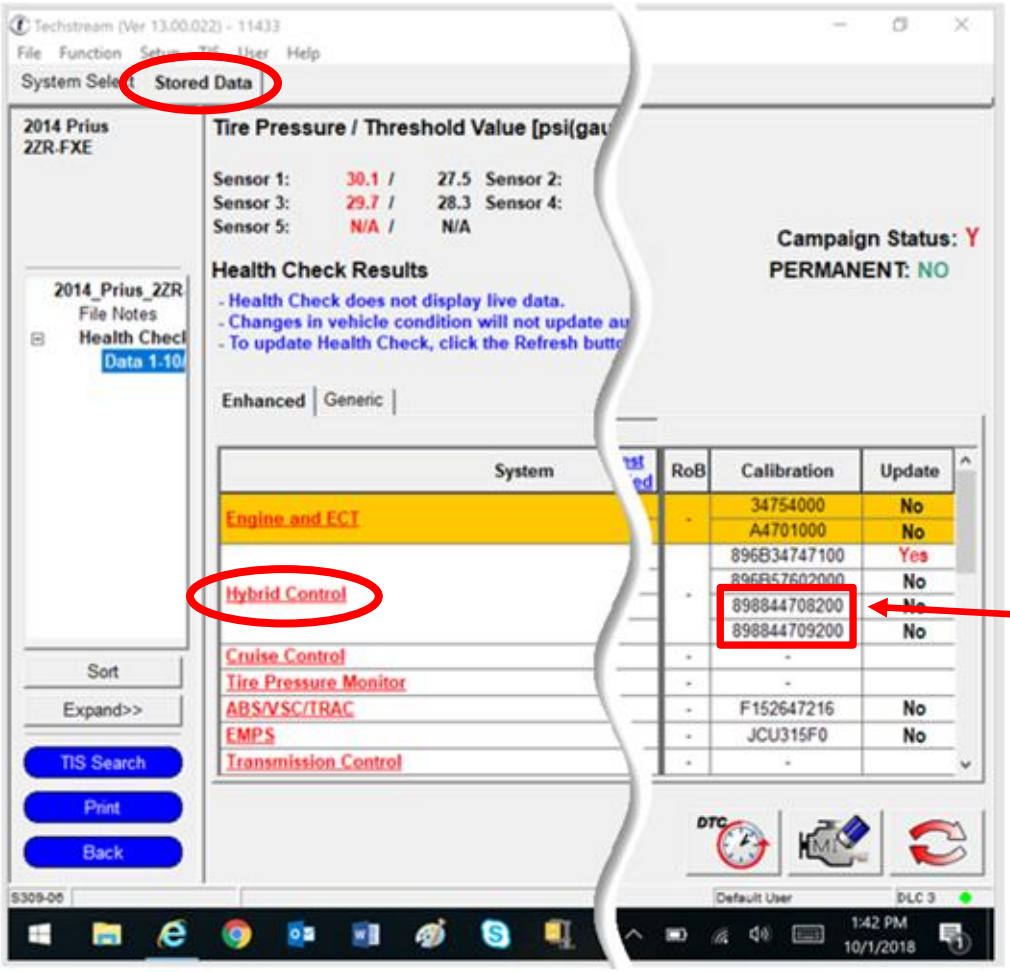
1. INSPECTION OF HYBRID CONTROL CIDs #3 & #4

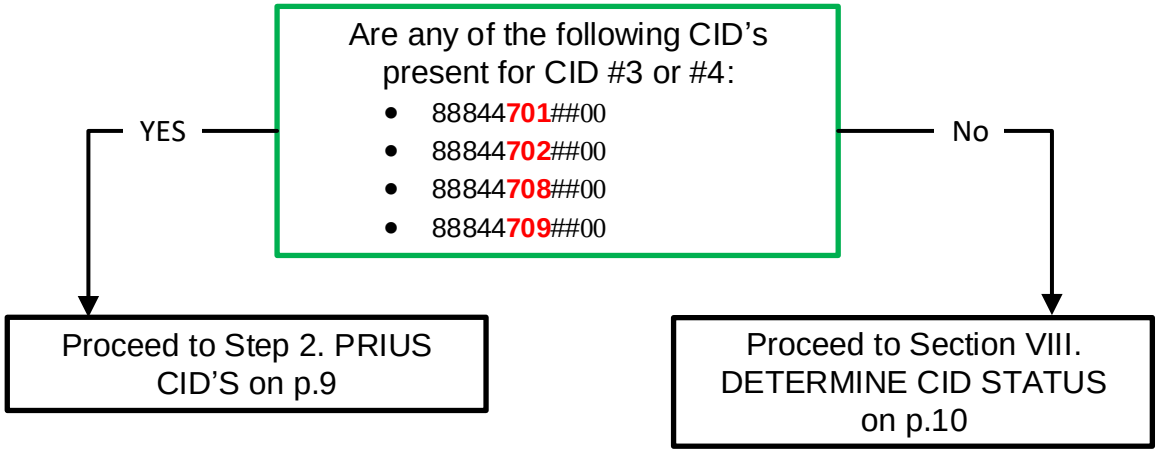
a. Identify the Hybrid Control CID #3 & #4 from the Stored Data tab.

b. Determine if any of the following Prius CIDs are present:

- 88844**701**##00
- 88844**702**##00
- 88844**708**##00
- 88844**709**##00

= Any number can be in these positions





2. PRIUS CIDs

It may be necessary to determine if a Prius V has been incorrectly repaired with a Prius inverter or Motor Generator (MG) ECU. This condition may be identified by reviewing the Hybrid Control System CIDs #3 & #4. If the #3 and #4 CIDs contain the numbers listed below in red, Prius components are installed into this Prius V vehicle.

Prius CID identification:

- 88844**701**##00
- 88844**702**##**0**0
- 88844**708**##00
- 88844**709**##00

= Any number can be in these positions

This mismatch of CID's will create an error message when performing J0V and will prevent its completion. To address this situation, the vehicle must be repaired using parts that are correct for a Prius V.

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

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

Prius Inverter Assembly:	G9200-49025
	G9200-49065
	G9200-49075
Prius Motor Generator ECU:	G920H-47030

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

Email address: quality_compliance@toyota.com
Email subject: J0V 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 CIDs

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

b. Determine the status of the **4 CIDs** for the Hybrid Control ECU; indicated by a **YES** or **NO** in the Update column.

Note: It's possible that all 4 CIDs need to be updated, as well as it's possible that only 1, 2 or 3 of the 4 CIDs need to be updated. If any of the CIDs indicate 'Yes,' proceed with the update procedure.

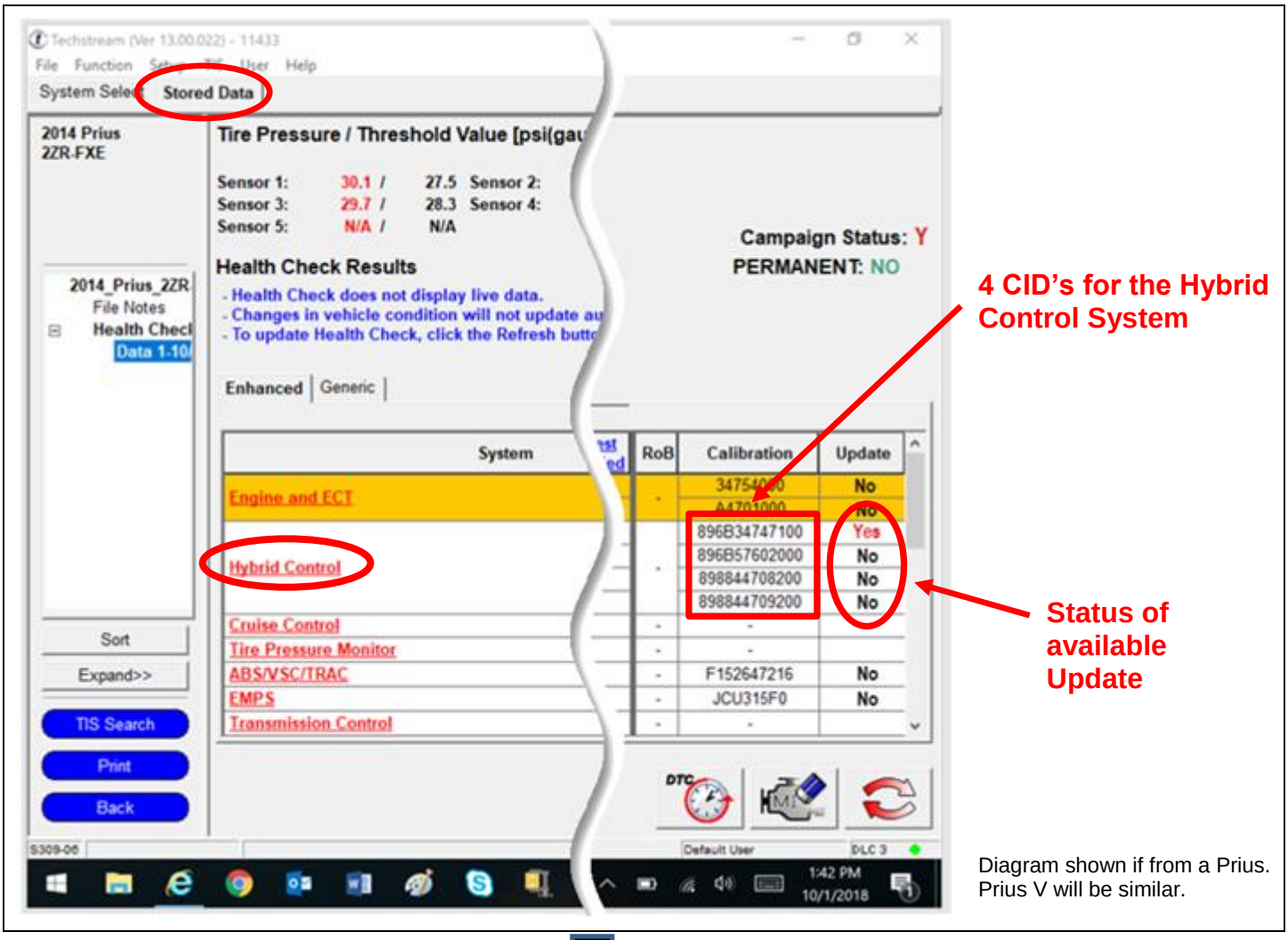
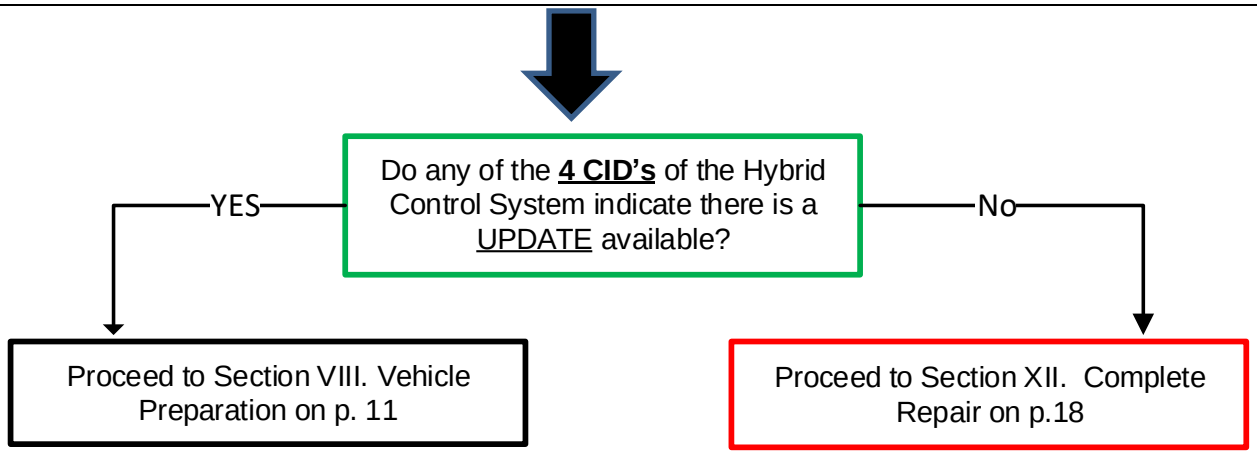


Diagram shown if from a Prius. Prius V will be similar.



IX. VEHICLE PREPARATION

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

1. 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.)

2. 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.

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).

3. VERIFY TECHSTREAM SETUP

a. Verify that the Techstream meets the following conditions:
- Software version 13.30 or greater is installed.
- The Techstream battery is fully charged. If not, connect the Techstream to a 120v source.
- The DLCIII cable is in good condition.

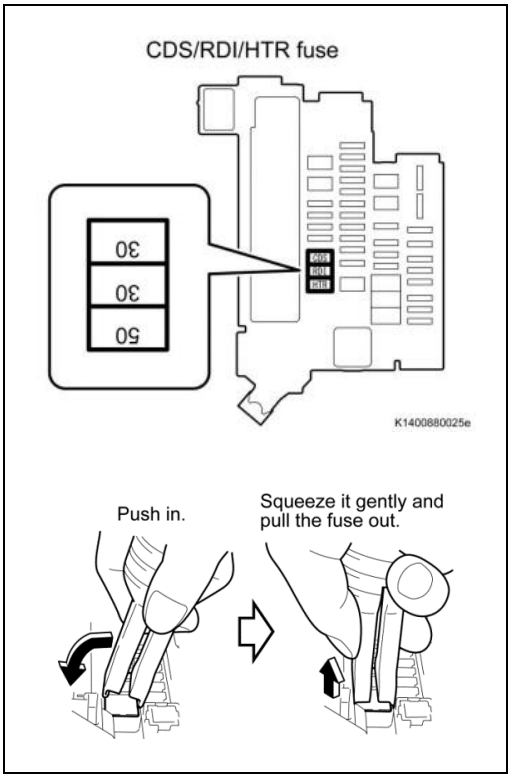
The Techstream battery must be maintained during the update procedure. If necessary, plug the Techstream into a 120v outlet to ensure that a failure does not occur.

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

4. 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.



5. 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).

Permanent damage to the ECUs can happen if these fuses are not removed.

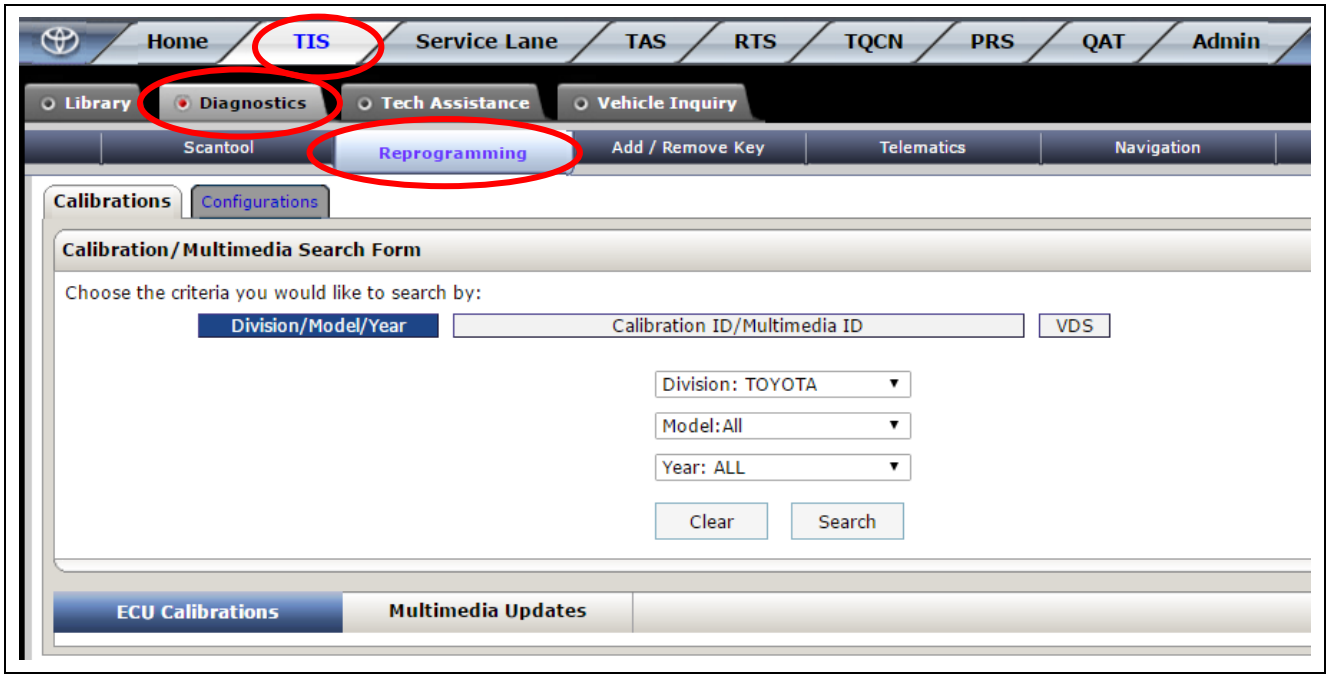
Removing these fuses will stop the vehicle from performing onboard diagnostic tests during the update, which could cause the update to fail and damage the ECU.

X. CUWC APPLICATION

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

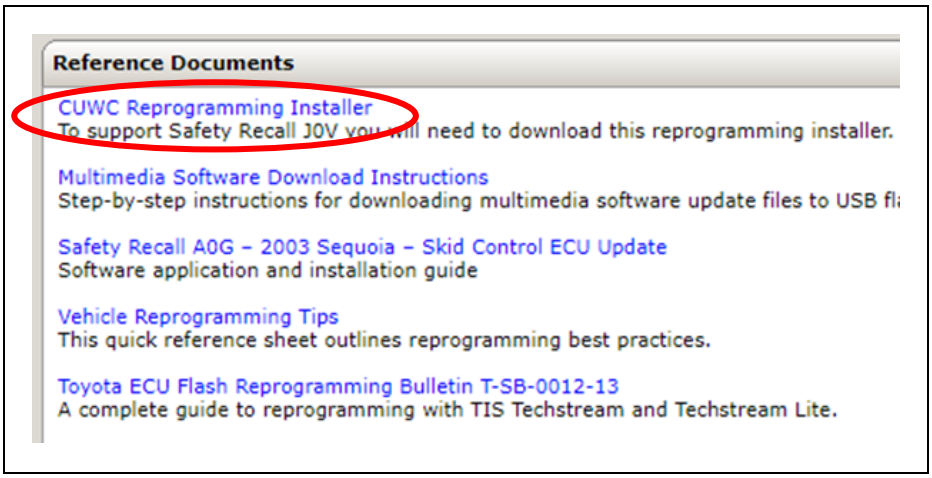
a. In TIS, select the following:

- TIS / Diagnostics / Reprogramming



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 Reprogramming Installer will only need to be completed one time for each Techstream.

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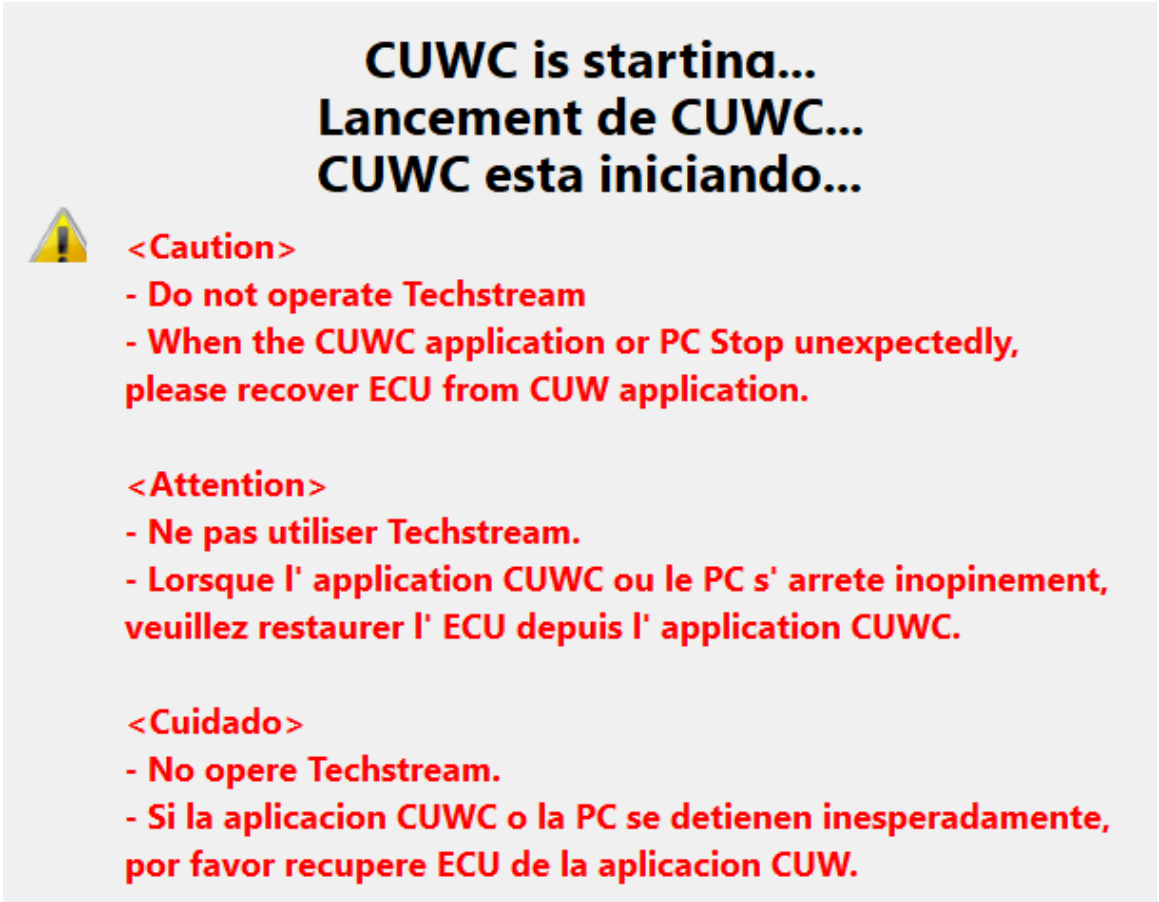
Installation of the CUWC Reprogramming Installer is required on each Techstream to install the new format of Calibration IDs. This new format will automatically, if needed, run the Calibration Wizard twice to complete the installation of updated CIDs in both the Power Management and Motor Generator ECUs.

Permanent damage to the ECUs 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
- Unplugging the Techstream from the vehicle while programming is 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 CIDs is complete, the image will close**.

Message displayed during CID update process:



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MULTIPLE CIDs MAY BE UPDATED

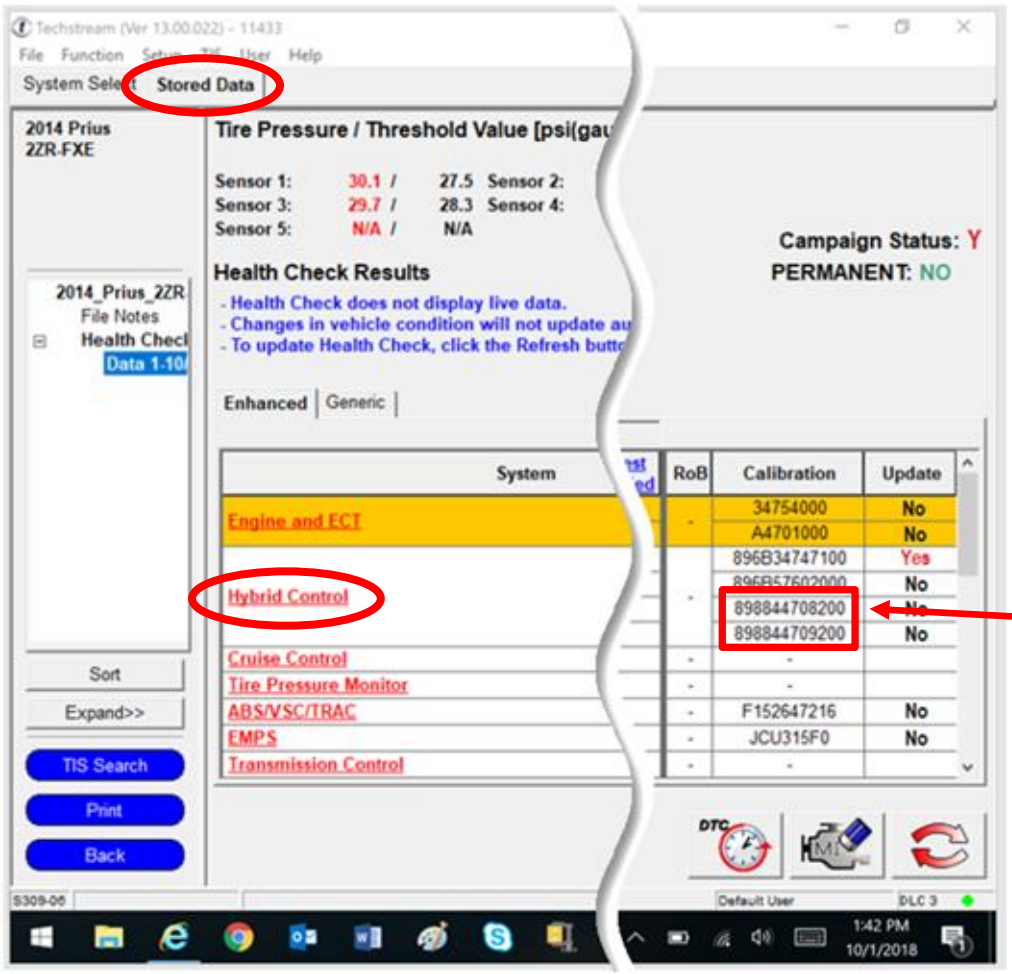
The CUWC Application will update the Hybrid Control System CID #1 (PM Main) using the Calibration Wizard, as required for Safety Recall J0V. Additionally, it will update CID #2, #3, and #4 of the Hybrid Control System using the Calibration Wizard, as needed, if the vehicle has not had Safety Recall F0R completed. When selecting an installation link from the charts below, please understand that the Calibration Wizard may **AUTOMATICALLY** run twice to complete the installation. The first installation will update CID #1 (PM Main) as required on all vehicles, and update CID #2 (PM sub) if necessary. The Calibration Wizard will then close as normal. If CIDs #3 and #4 need to be updated, the Calibration Wizard will **AUTOMATICALLY** open again and compete these installations. DO NOT exit the application or shut off the vehicle or Techstream while the large CUWC text box is present on the screen. Permanent damage to the ECU will occur.

CID #1: Power Management Main
CID #2: Power Management sub
CID #3: Motor Generator #1
CID #4: Motor Generator #2

XI. CID INSTALLATION

1. INSTALLATION OF CIDS

a. Identify the Hybrid Control CID #3 & #4 from the Stored Data tab.
b. Referencing the correct chart below, identify the chart that has the matching 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.



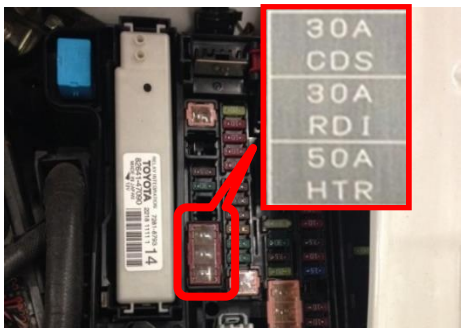
CID #3 & #4

Diagram shown if from a Prius. Prius V will be similar.

Model	CID #	Original	Current
Prius V	CID #1	896B34711000 896B34711100 896B34727000 896B34727100 896B34727200 896B34727300 896B34761000 896B34764000	**Prius V #1** 896B34761100
	CID #2	896B54705000 896B54705100	896B54705100
		896B54709000	896B54709000
		896B54712000	896B54712000
	CID #3	89884470***6100*** 89884470***6200*** 89884470***6300*** 89884470***6400***	898844706400
	CID #4	89884470***7100*** 89884470***7200*** 89884470***7200*** 89884470***7400***	898844707400

Prius V	CID #1	896B34711000 896B34711100 896B34727000 896B34727100 896B34727200 896B34727300 896B34761000 896B34764000	**Prius V #2** 896B34761100
	CID #2	896B54705000 896B54705100	896B54705100
		896B54709000	896B54709000
		896B54712000	896B54712000
	CID #3	89884471***2000*** 89884471***2100*** 89884471***2200*** 89884471***2300***	898844712300
	CID #4	89884471***3000*** 89884471***3100*** 89884471***3200*** 89884471***3300***	898844713300

XII. COMPLETE REPAIR



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 DTCs that may have set during the re-flash procedure.

d. **Re-run the Health Check to confirm that no DTCs reappear.**

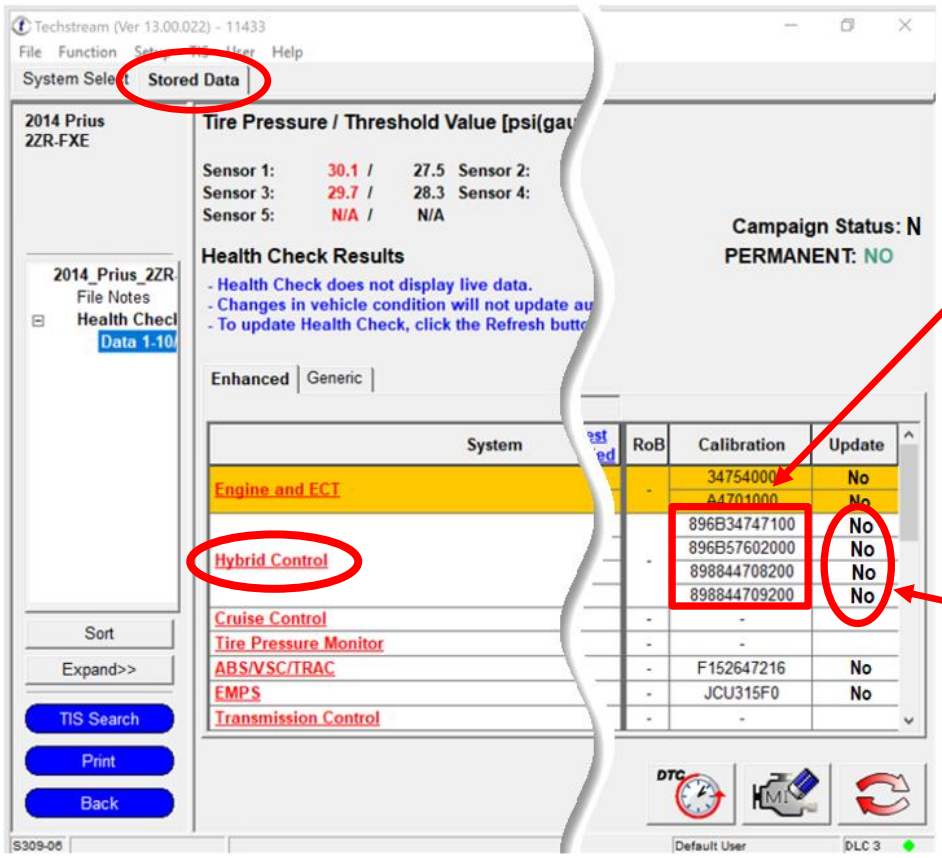
STOP

THIS VERIFICATION HEALTH CHECK IS NECESSARY to update the results and CIDs to the National database.

3. CONFIRM CID UPDATE

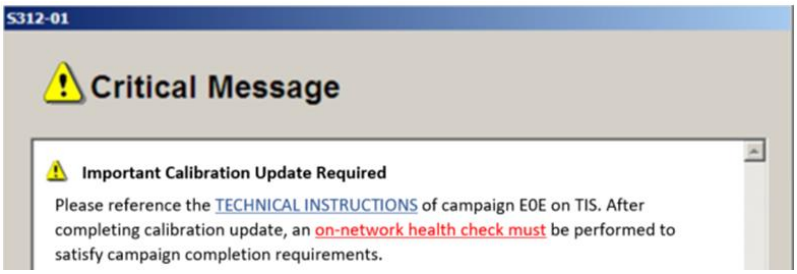
a. On the Stored Data tab, confirm the following for the Hybrid Control System:

- **The Update column lists "No" for all 4 Hybrid Control System CIDs**



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

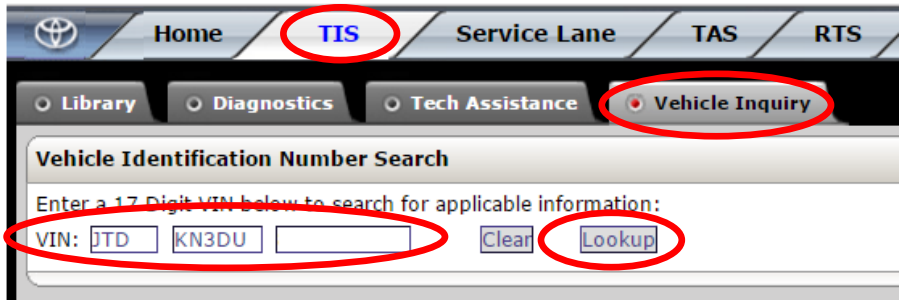
Note: If you receive the following message **after** the Verification Health Check, you have not properly completed the Required Calibration Updates!!



4. PERFORM CALIBRATION VERIFICATION CHECK

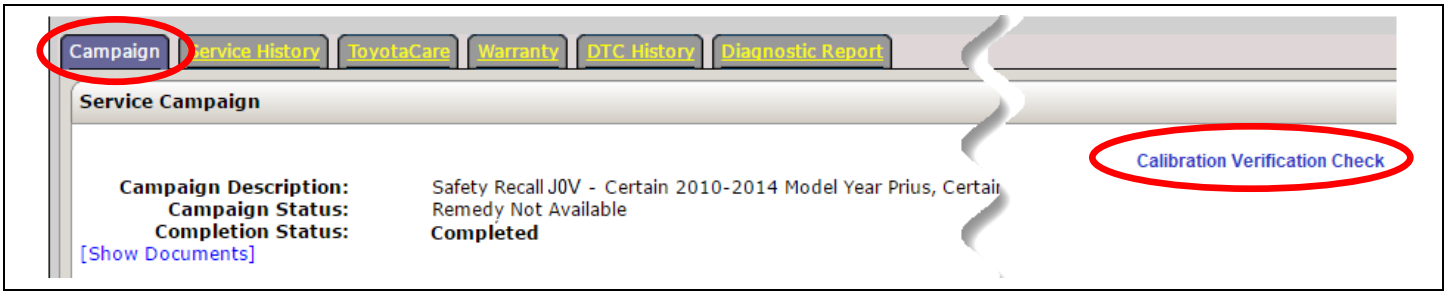
a. Proceed to the following location:

- **TIS / Vehicle Inquiry / (input VIN #) / Lookup**



b. Proceed to the following location:

- **Campaign tab / Calibration Verification Check** for Safety Recall J0V
- **Input your TIS login password for verification**



Note: If the Calibration Verification Check link does not appear, the technician signed onto TIS does not meet the certification requirement of this campaign.

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c. Review the status of the **Calibration(s) Update Required column:**

- OK: The CIDs have successfully loaded. The Calibration(s) Update Required column will say “No” in a green box. Proceed to the next step.
- NG: The CIDs did not successfully update. The Calibration(s) Update Required column will say “Yes” in a red box. Review these instructions and retry the installation process again.

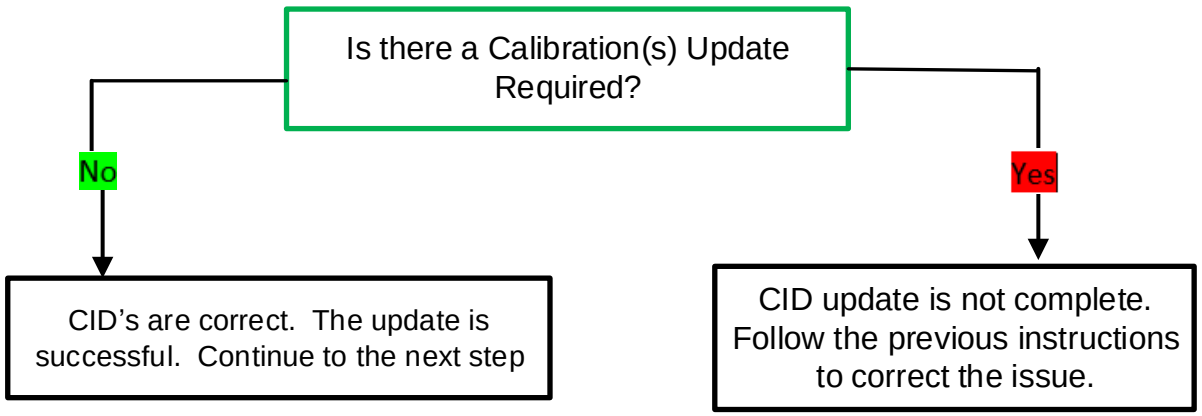
OK

Campaign	Health Check Time	System	Vehicle Calibration		Minimum Required Campaign Calibration	Status	Calibration(s) Update Required?	Link(s)
J0V	2019-01-10 18:02:09	Hybrid System	898844713300	→	898844713300	Complete	No	Info
			898844712300	→	898844712300	Complete		
			896B34761100	→	896B34761100	Complete		

NG

Campaign	Health Check Time	System	Vehicle Calibration		Minimum Required Campaign Calibration	Status	Calibration(s) Update Required?	Link(s)
J0V	2019-01-07 07:59:38	Hybrid System	898844702300	→	898844702300	Complete	Yes	Info
			898844701400	→	898844701400	Complete		
			896B34701800	→	896B34732000	Incomplete		

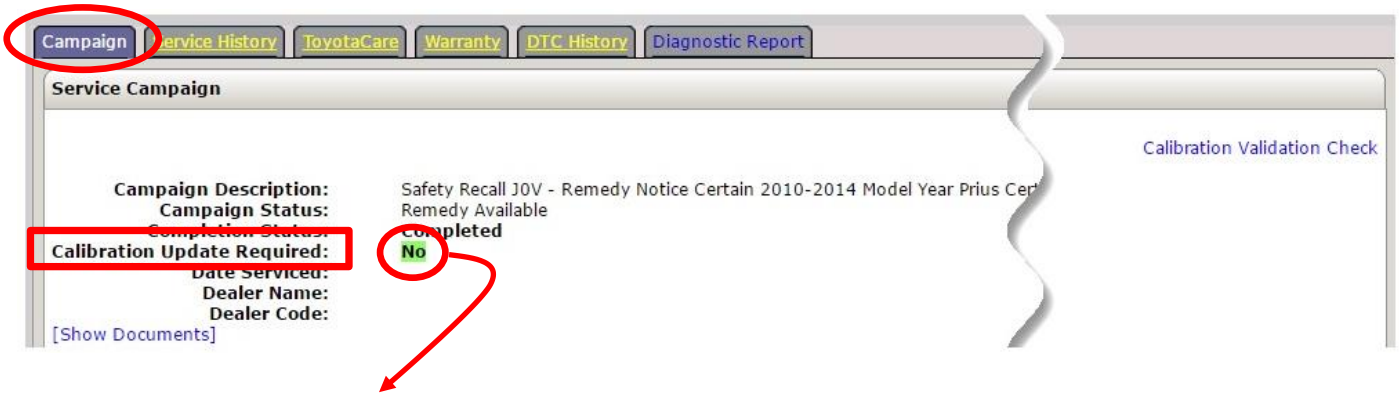
Note: Although there are 4 CIDs for the Hybrid Control System, CID #2 will not be displayed on the Calibration Verification Check. However, the judgment shown in the Calibrations(s) Update Required column does reflect the status of all 4 CIDs. There is no need to manually check CID #2.



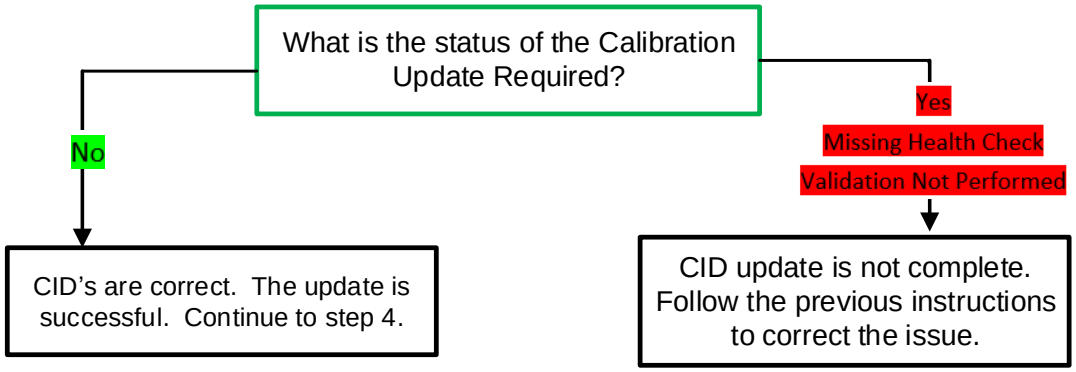
d. Close the Calibration Verification Check screen

5. CONFIRM CALIBRATION UPDATE REQUIRED:

a. Check the status of the **Calibration Update Required** to confirm CID update completion:

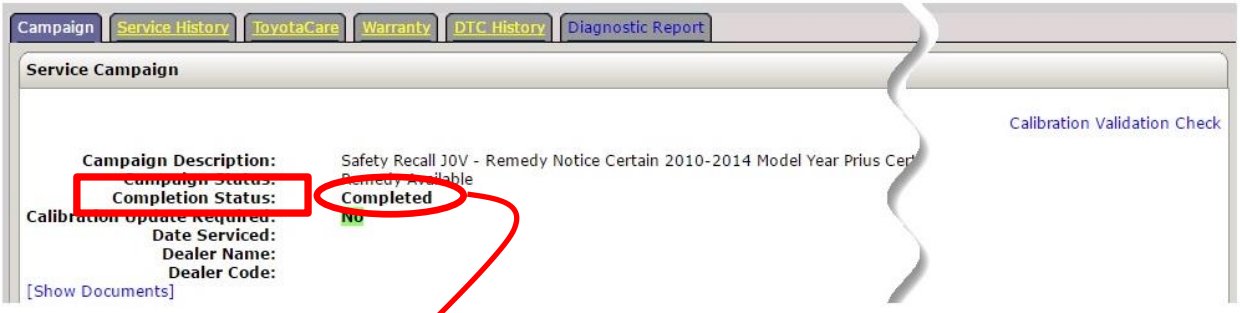


- No : Successful Completion of Campaign Updates. Vehicle CID's are correct.
- Yes : CID's are not correctly updated.
- Missing Health Check : Final Health Check was not performed
- Validation Not Performed : Calibration Validation Check was not performed after completing CID update(s).



Note: Completion Status

The Completion Status value *does not* reflect the status of the Hybrid Control System CID's. This value reflects the completion status of the Campaign, as determined by the warranty claim submission. The Completion Status will be Completed once the warranty claim is submitted and paid.

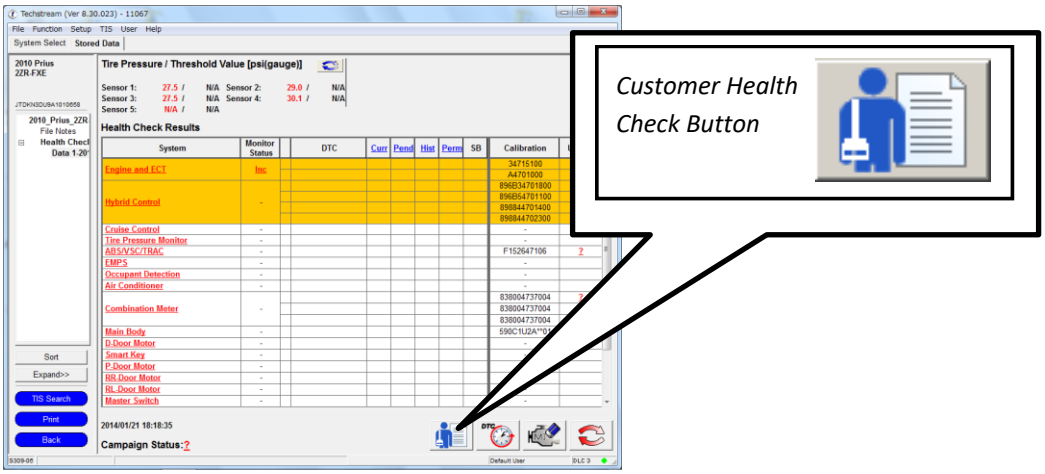


Completion Status:

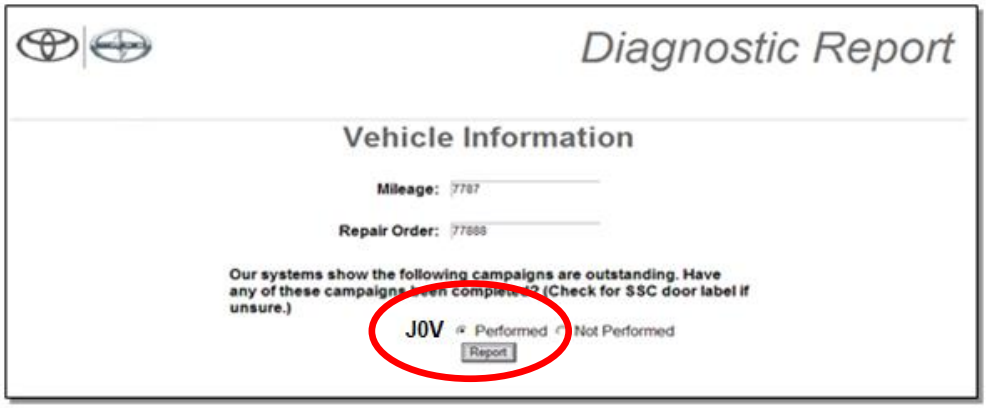
- Completed = Warranty Claim has been paid.
- Not Completed = The Warranty Claim has not been submitted, or the claim has been submitted but not yet approved or paid.

6. PRINT CUSTOMER HEALTH CHECK REPORT

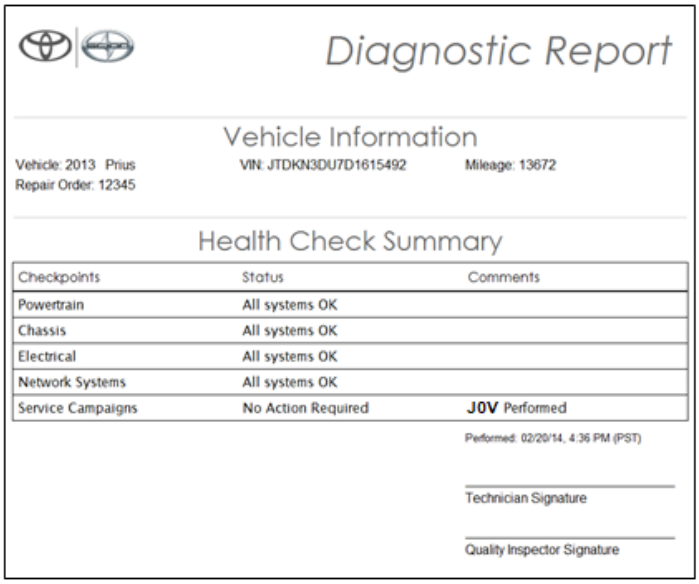
a. From the Stored Data tab, select the Customer Health Check Report button (TIS will launch when button is pressed).



b. Log in to TIS.
c. Input Vehicle Mileage and Repair Order number.
d. Check the “Performed” campaign button for campaign J0V.
e. Select the Report button.



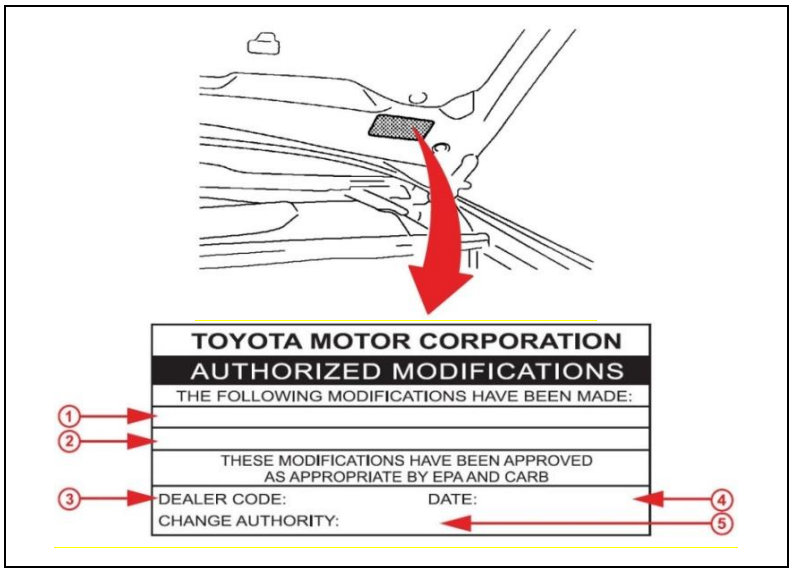
f. Confirm Customer Health Check Report information is correct.



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

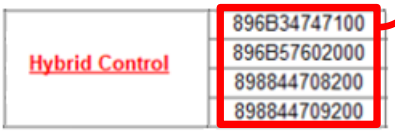
7. ATTACH THE AUTHORIZED VEHICLE MODIFICATION LABEL

a. Fill out the label.
b. Affix the label to the under-side of the hood.



1	**Hybrid Control System**
2	(Calibration IDs)
3	(Dealer Code)
4	(Date Completed)
5	**Safety Recall J0V**

Calibration IDs listed for the Hybrid Control System after completing the final Health Check. The CIDs will vary from car to car.



◄ VERIFY REPAIR QUALITY ►

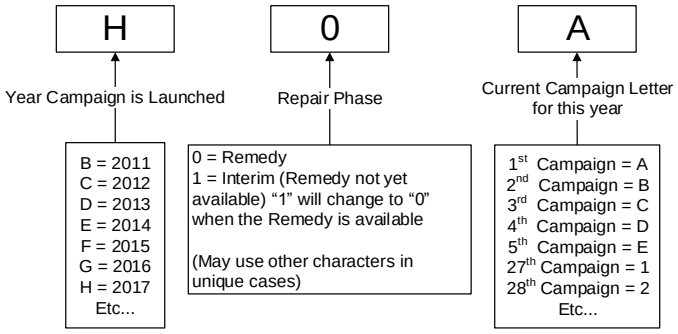
- **Confirm all ECM Calibration has been updated successfully to the NEW CIDs.**
- **Confirm that the Authorized Modification Label has been installed**
- **If you have any questions regarding this Safety Recall, please contact your regional representative**

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:

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.