

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

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:

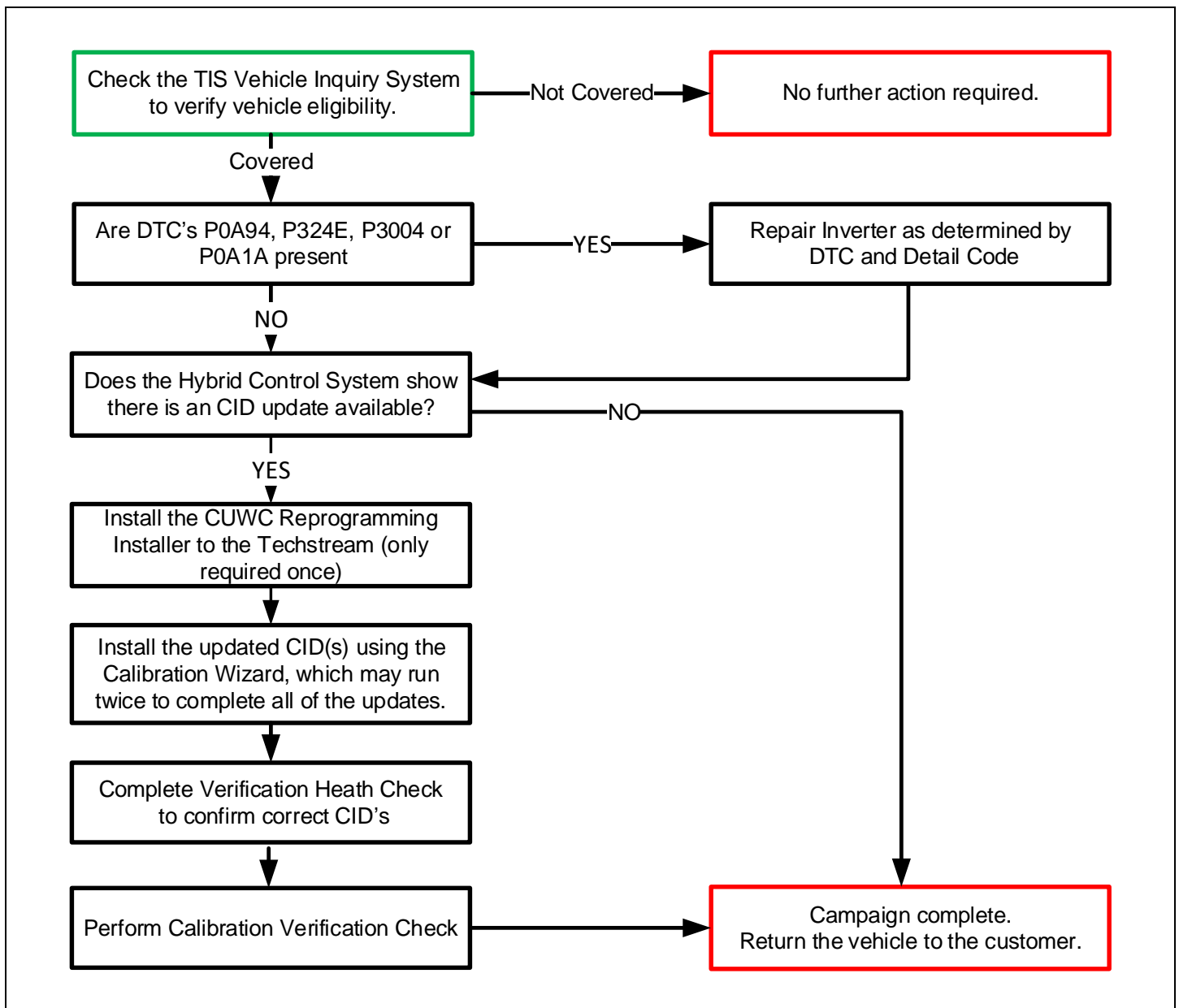
- Expert Technician (Hybrid)
- Master Technician
- Master Diagnostic Technician



To complete the Calibration Verification Check required for this campaign, the technician must meet the required certification levels.

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 that each VIN is eligible for this Safety Recall, and that it has not already been completed prior to dealer shipment or by another dealer.

Note: TMNA warranty will not reimburse dealers for repairs completed on vehicles that are not affected or were completed by another dealer.

III. PREPARATION

1. PARTS

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

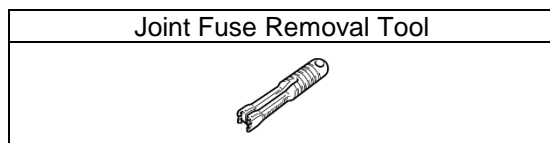
*Labels can be ordered in packs of 25 from the MDC through the Dealer Daily Website

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



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



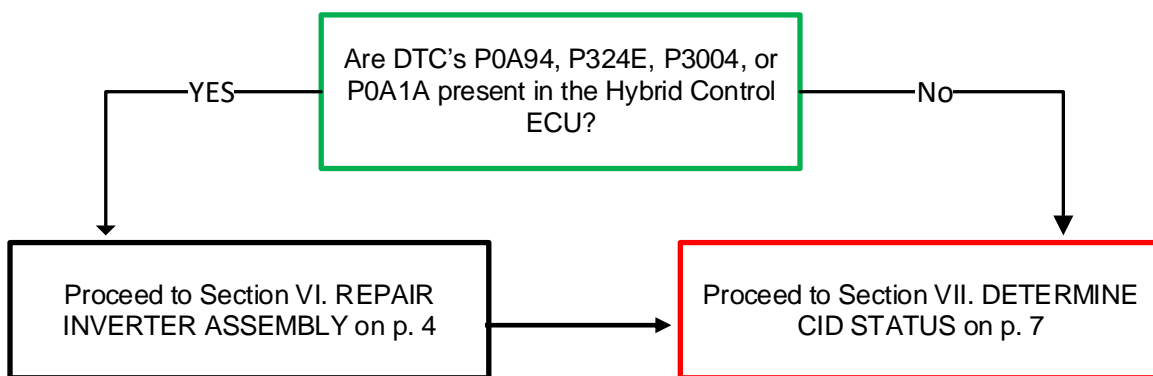
1. PERFORM HEALTH CHECK

- a. Using a Techstream, perform a Health Check.



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.

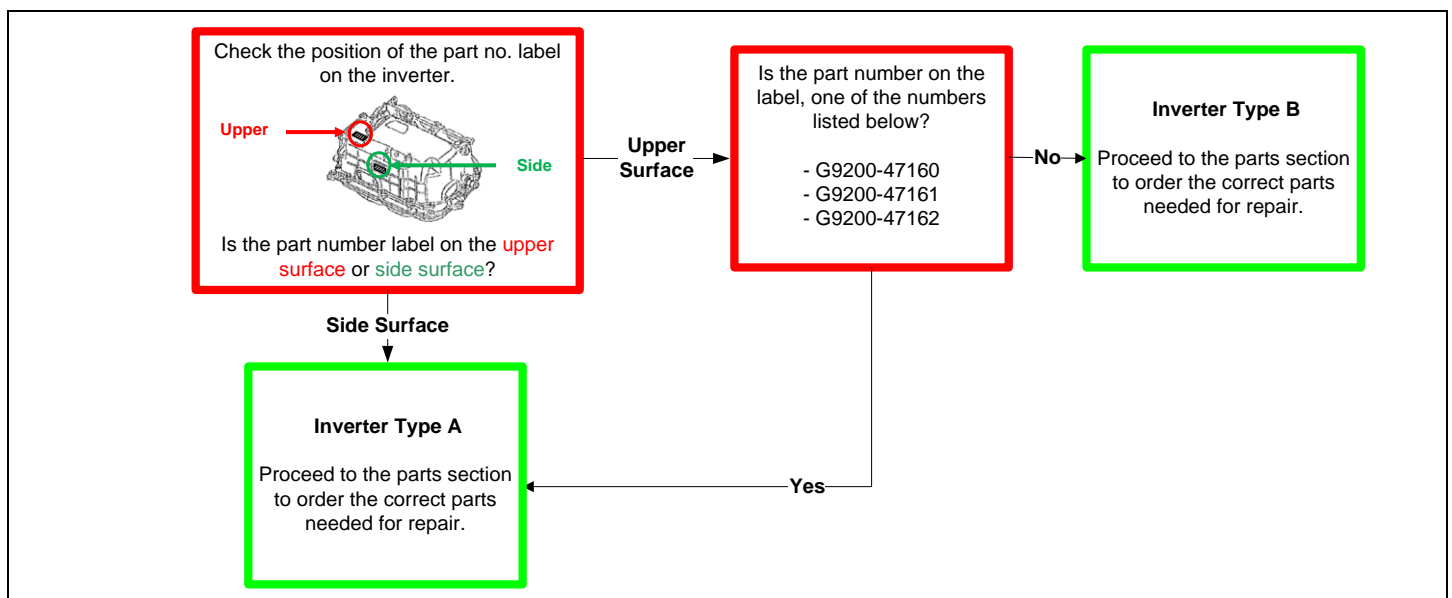


VI. REPAIR INVERTER ASSEMBLY

Note: Repairing the inverter required only if DTC's P0A94, P324E, P3004 or P0A1A is present. If these DTC's are not present, skip to section VII. Determine CID Status on page 7.

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

- If multiple DTCs are present save the freeze frame data.
- After saving the freeze frame data, clear codes and confirm what DTCs reset.
- If multiple codes return, follow the repair manual diagnosis procedure for the DTC with Freeze Frame Data Occurrence Order value of "1".
- 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	<ul style="list-style-type: none"> • 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](#)

4. CONTINUE TO THE NEXT SECTION TO CONFIRM CID'S STATUS

VII. DETERMINE CID STATUS

1. DETERMINE STATUS of HYBRID CONTROL SYSTEM CID's

- Locate the Update column for the Hybrid Control System in the Stored Data tab.
- Determine the status of the **4 CID's** for the Hybrid Control ECU; indicated by a **YES** or **NO** in the Update column.

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

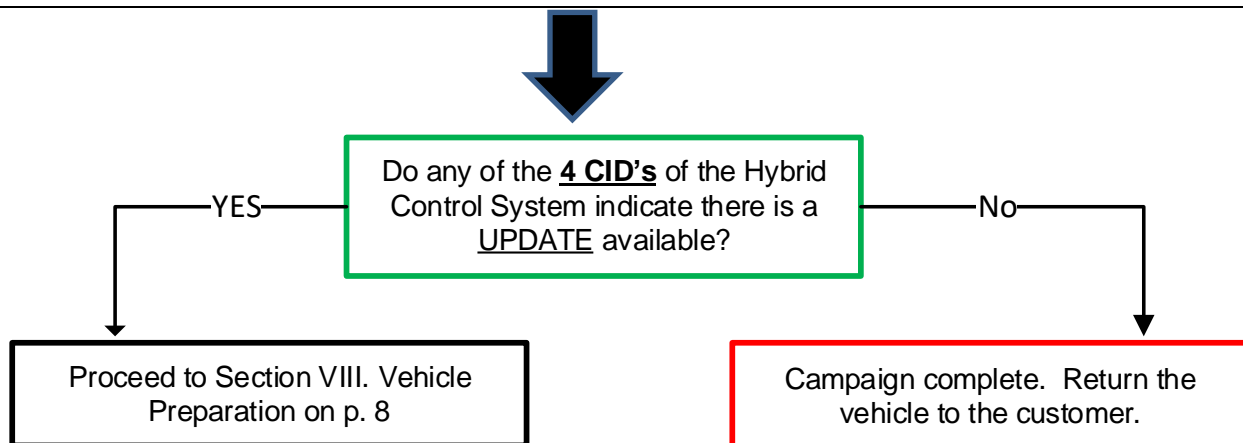
The screenshot shows the Techstream interface for a 2014 Prius. The 'Stored Data' tab is selected. Under 'Health Check Results', it states: 'Health Check does not display live data. Changes in vehicle condition will not update automatically. To update Health Check, click the Refresh button.' Below this is a table with columns: System, RoB, Calibration, and Update. The 'Hybrid Control' system is highlighted, and its four CID's are listed with their update status.

System	RoB	Calibration	Update
Engine and ECT	-	34754000	No
	-	A4701000	No
	-	896B34747100	Yes
	-	896B57602000	No
	-	898844708200	No
	-	898844709200	No
Cruise Control	-	-	-
Tire Pressure Monitor	-	-	-
ABS/VSC/TRAC	-	F152647216	No
EMPS	-	JCU315F0	No
Transmission Control	-	-	-

Red annotations on the screenshot:

- A red circle around 'Stored Data' in the top menu.
- A red circle around 'Hybrid Control' in the system list.
- A red circle around the 'Update' column header.
- A red circle around the 'Yes' value for CID 896B34747100.
- A red arrow pointing to the four CID's for the Hybrid Control System.
- A red arrow pointing to the 'Status of available Update' column.

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



VIII. VEHICLE PREPERATION

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. Verify Techstream Configuration

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

Please input the following information.

Required Information

This Information is used for error report follow up.

Dealer Name

Dealer Code

Dealer Phone

Dealer Country /Region

This selection is used to configure Techstream network settings.

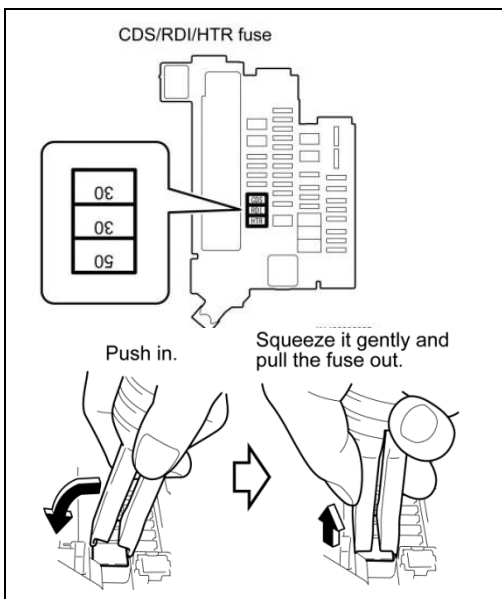
User Type

Example:
TOYOTA/LEXUS/SCION Dealers in the U.S. for one.tis.toyota.com upgrade

5. MAINTAIN BRAKE SYSTEM PRESSURE

- 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.



6. REMOVE JOINT FUSE FROM ENGINE ROOM FUSE BOX

- Confirm the joint fuse orientation before removal because the fuse can be installed in either direction.
- Using the fuse puller remove the joint fuse that encases the CDS (30A), RDI (30A) and HTR (50A).



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

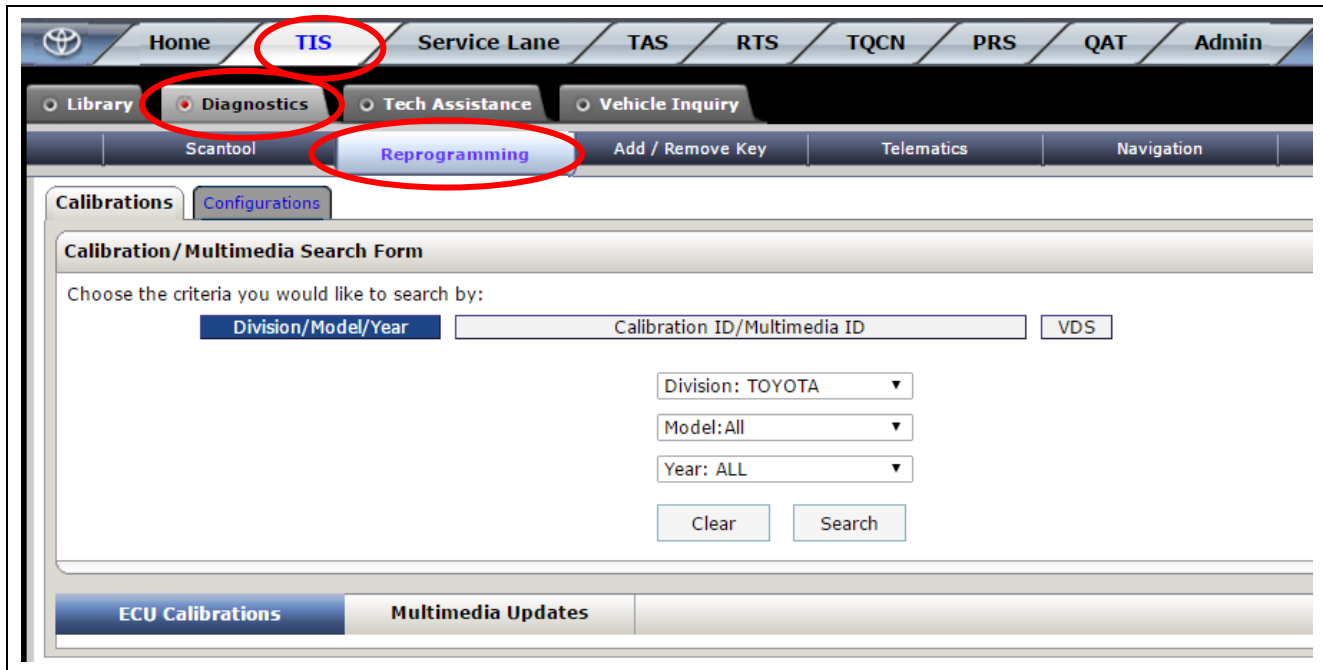
Removing these fuses will stop the vehicle from performing onboard diagnostic tests during the update, which could cause the update to fail and damage the ECU.

IX. CUWC APPLICATION

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

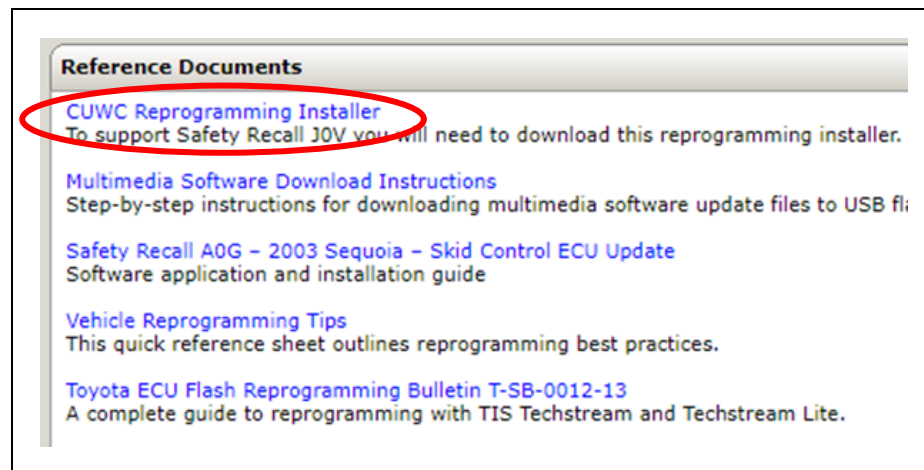
a. In TIS, select the following:

- 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 ID's. This new format will automatically, if needed, run the Calibration Wizard twice to complete the installation of updated CID's in both the Power Management and Motor Generator ECU's.

	<p><u>Permanent damage to the ECU's will occur if the following actions are attempted during the CID update procedure:</u></p> <ul style="list-style-type: none">• Attempt to close the CUWC installer• Attempt to close the Calibration Wizard• Turning off the vehicles ignition• Turning off the Techstream• Unplugging the Techstream from the vehicle while programming is in process
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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:

CUWC is starting...
Lancement de CUWC...
CUWC esta iniciando...



<Caution>

- Do not operate Techstream
- When the CUWC application or PC Stop unexpectedly, please recover ECU from CUW application.

<Attention>

- Ne pas utiliser Techstream.
- Lorsque l' application CUWC ou le PC s' arrete inopinement, veuillez restaurer l' ECU depuis l' application CUWC.

<Cuidado>

- No opere Techstream.
- Si la aplicacion CUWC o la PC se detienen inesperadamente, por favor recupere ECU de la aplicacion CUW.

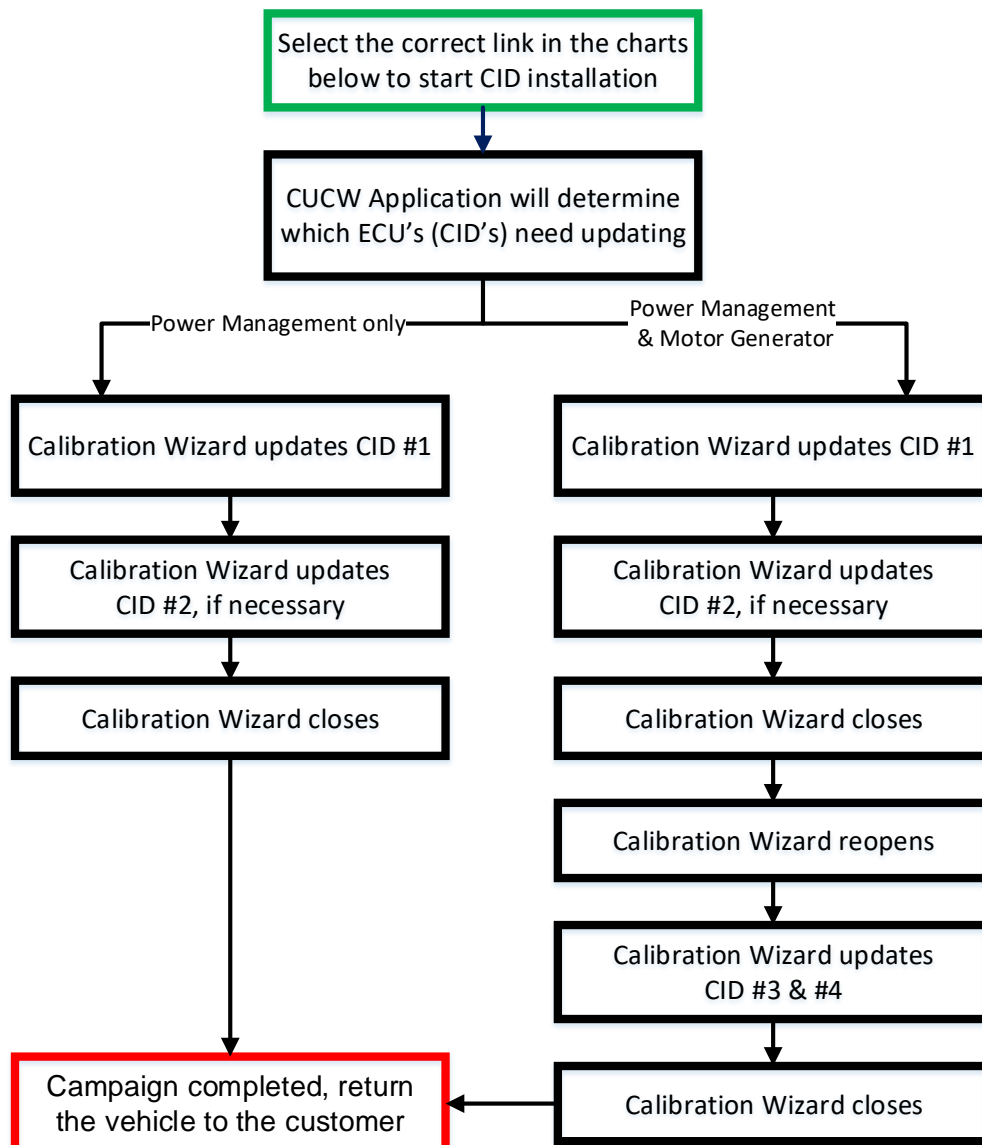
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MULTIPLE CID's MAY BE UPDATED

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 CID's #3 and #4 need to be updated, the Calibration Wizard will **AUTOMATICALLY** open again and complete 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. Permeant 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



X. CID INSTALLATION

2. INSTALLATION OF CID'S

- Identify the Hybrid Control CID #3 & #4 from the Stored Data tab.
- Referencing the correct model year in the chart's below, identify the chart that has the correct CID #3 & #4.

Note: On the 2010 models, CID #3 & #4 will appear in two separate charts. It will be necessary to also identify CID#1 in the chart.

- Select the Group # link (blue text) to begin the update process.
- Follow the instruction on the screen to complete the installation.

Techstream (Ver 13.00.022) - 11433

File Function Settings Tools User Help

System Select **Stored Data**

2014 Prius
2ZR-FXE

Tire Pressure / Threshold Value [psi(gau)]

Sensor 1: 30.1 / 27.5 Sensor 2:
Sensor 3: 29.7 / 28.3 Sensor 4:
Sensor 5: N/A / N/A

Health Check Results

- Health Check does not display live data.
- Changes in vehicle condition will not update automatically.
- To update Health Check, click the Refresh button.

Enhanced | Generic |

2014_Prius_2ZR
File Notes
Health Check
Data 1-10/

Sort
Expand>>
TIS Search
Print
Back

System	RoB	Calibration	Update
Engine and ECT	-	34754000	No
	-	A4701000	No
	-	896B34747100	Yes
	-	896B57602000	No
Hybrid Control	-	898844708200	No
	-	898844709200	No
Cruise Control	-	-	-
Tire Pressure Monitor	-	-	-
ABS/VSC/TRAC	-	F152647216	No
EMPS	-	JCU315F0	No
Transmission Control	-	-	-

DTC

Default User

DLC 3

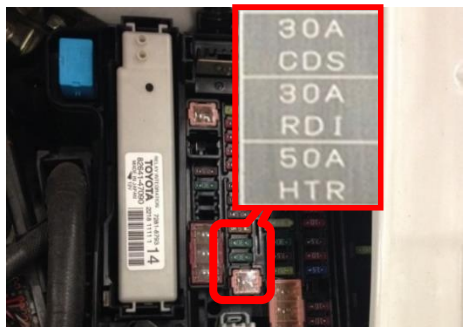
1:42 PM
10/1/2018

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

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

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

XI. 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).



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.**



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

1. 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 CID's

Techstream (Ver 13.00.022) - 11433

File Function Setup User Help

System Select **Stored Data**

2014 Prius 2ZR-FXE

Tire Pressure / Threshold Value [psi(gau

Sensor 1: 30.1 / 27.5 Sensor 2: 29.7 / 28.3 Sensor 3: N/A / N/A Sensor 4: N/A / N/A

Health Check Results

- Health Check does not display live data.
- Changes in vehicle condition will not update au
- To update Health Check, click the Refresh butto

Enhanced Generic

System	RoB	Calibration	Update
Engine and ECT	-	34754000	No
	-	A4701000	No
Hybrid Control	-	896B34747100	No
	-	896B57602000	No
	-	898844708200	No
	-	898844709200	No
Cruise Control	-	-	-
Tire Pressure Monitor	-	-	-
ABS/VSC/TRAC	-	F152647216	No
EMPS	-	JCU315F0	No
Transmission Control	-	-	-

Sort Expand>> TIS Search Print Back

S309-06

Default User

PLC 3

4 CID's for the Hybrid Control System

MUST say "NO"



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

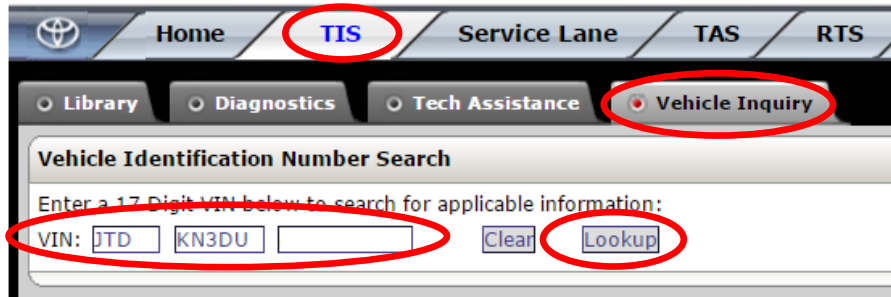
Note: If you receive the following message **after** the Verification Health Check, you have not properly completed the Required Calibration Updates!!



2. PERFORM CALIBRATION VERIFICATION CHECK

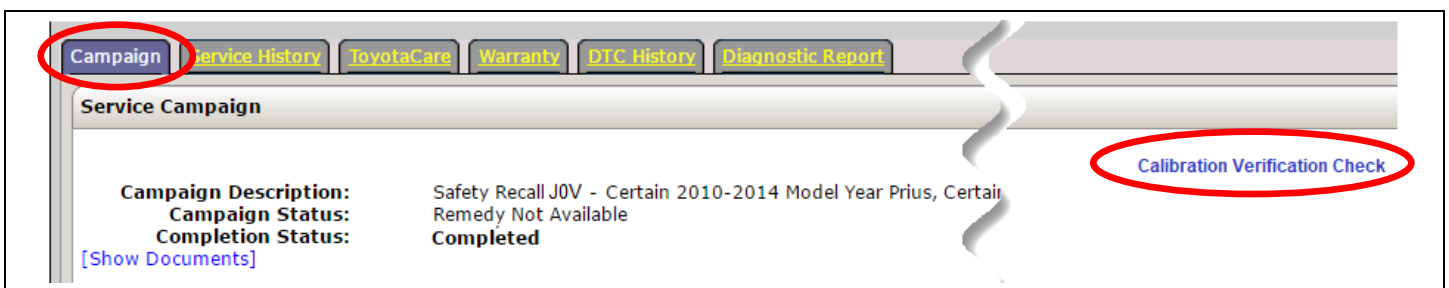
a. Proceed to the following location:

- 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.

(cont. on next page)

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

- **OK:** The CID's have successfully loaded. The Calibration(s) Update Required column will say "No". Proceed to the next step.
- **NG:** The CID's did not successfully update. The Calibration(s) Update Required column will say "Yes". 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)
	EOE	HC: 1/5/09 6:25:01	Hybrid Control	18900500	18900500	Complete	No	Info
				18900590	18900590	Complete		
				46010890	46010890	Complete		
				46010890	46010890	Complete		
NG	Campaign	Health Check Time	System	Vehicle Calibration	Minimum Required Campaign Calibration	Status	Calibration(s) Update Required:	Link(s)
	EOE	HC: 1/5/09 6:25:01	Hybrid Control	16000000	17000000	Incomplete	Yes	Info
				35000000	36000000	Incomplete		
				46010890	46010890	Complete		
				46010890	46010890	Complete		
NG	Campaign	Health Check Time	System	Vehicle Calibration	Minimum Required Campaign Calibration	Status	Calibration(s) Update Required:	Link(s)
	EOE	HC: 1/5/09 6:25:01	Hybrid Control	16000000	17000000	Incomplete	Yes	Info
				35000000	36000000	Incomplete		
				46950000	52630000	Incomplete		
				72560000	21930000	Incomplete		

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).

The screenshot shows the Techstream (Ver 6.30.023) - 11067 interface. The 'Stored Data' tab is active, showing data for a 2010 Prius ZZR-FXE. A callout box labeled 'Customer Health Check Button' points to a blue icon of a person with a document. The main window displays various vehicle data including Tire Pressure, Health Check Results, and a list of components with their status and calibration values.

- 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.



Diagnostic Report

Vehicle Information


Mileage: 7787

Repair Order: 7788

Our systems show the following campaigns are outstanding. Have any of these campaigns been completed? (Check for SSC door label if unsure.)

J0V ☒ Performed ☐ Not Performed

f. Confirm Customer Health Check Report information is correct.



Diagnostic Report

Vehicle Information

Vehicle: 2013 Prius VIN: JTDKN3DU7D1615492 Mileage: 13672
Repair Order: 12345

Health Check Summary

Checkpoints	Status	Comments
Powertrain	All systems OK	
Chassis	All systems OK	
Electrical	All systems OK	
Network Systems	All systems OK	
Service Campaigns	No Action Required	J0V Performed

Performed: 02/20/14, 4:36 PM (PST)

Technician Signature _____

Quality Inspector Signature _____

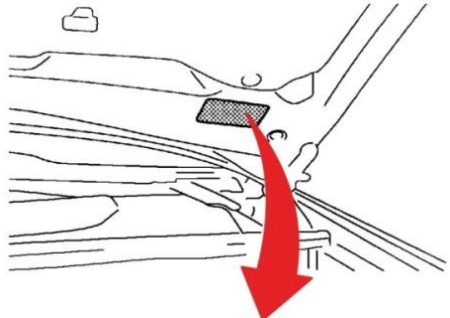
g. Print Customer Health Check Report from TIS.

h. Sign and provide to the customer.

4. ATTACH THE AUTHORIZED VEHICLE MODIFICATION LABEL

a. Fill out the label.

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



TOYOTA MOTOR CORPORATION
AUTHORIZED MODIFICATIONS

THE FOLLOWING MODIFICATIONS HAVE BEEN MADE:

THESE MODIFICATIONS HAVE BEEN APPROVED
AS APPROPRIATE BY EPA AND CARB

DEALER CODE: _____ DATE: _____

CHANGE AUTHORITY: _____

1	Hybrid Control System
2	(Calibration ID's)
3	(Dealer Code)
4	(Date Completed)
5	Safety Recall J0V

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

XII. 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

