

TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL 20TA10

HYBRID SYSTEM SOFTWARE UPDATE

CERTAIN 2014 - 2017 PRIUS V

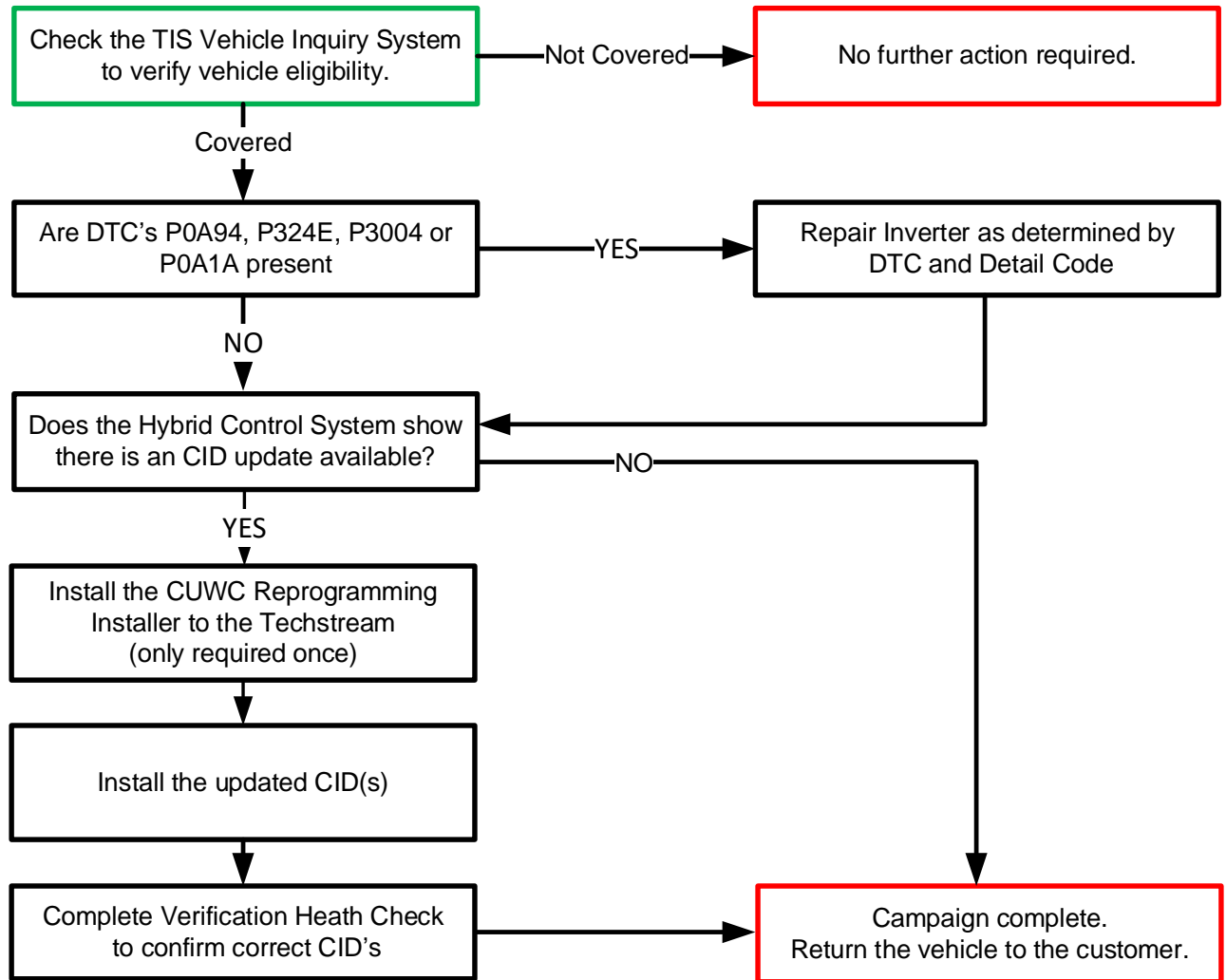
**Technical Instructions for the 2013-2015 Prius
are in a separate document**

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

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

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

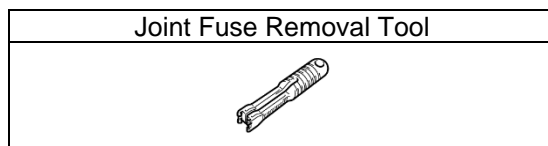
*Labels can be ordered in packs of 25 from the MDC through the Dealer Daily Website

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



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 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

- 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



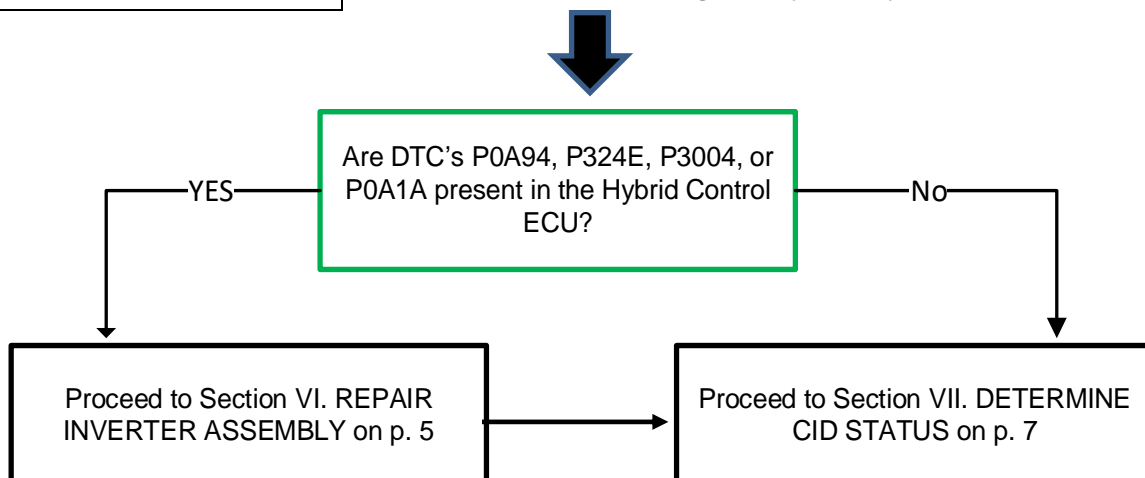
2. PERFORM HEALTH CHECK

- Using a Techstream, perform a Health Check.



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. DETERMINE CID STATUS on p 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 below to identify the parts required for repair. The correct parts are listed in the bottom row of each table.

2014 MY PRIUS V

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) 00272-SLLC2 (1)	G920H-47040 (1) 04899-47060 (1) 08826-00100 (1)	G920H-47040 (1) 04899-47021 (1) 08887-02809 (2) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1) 00272-SLLC2 (1)	G920H-47040 (1) G920J-52010 (1) 04899-47021 (1) 08887-02809 (2) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1) 00272-SLLC2 (1)	ORDER INVERTER BY VIN

2015-2017 MY PRIUS V

DTC	DTC DETAIL CODE	• IPM	• MG-ECU	• MG-ECU • IPM	• MG-ECU • CURRENT SENSOR • IPM	INVERTER ASSY
P0A94	127			X		
	172	X				
	550			X		
	553	X				
	557	X				
P324E	788				X	
P0A1A	151				X	
	166		X			
	517		X			
	658		X			
	791		X			
	809		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) 00272-SLLC2 (1)	G920H-47040 (1) 04899-47060 (1) 08826-00100 (1)	G920H-47040 (1) 04899-47021 (1) 08887-02809 (2) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1) 00272-SLLC2 (1)	G920H-47040 (1) G920J-52010 (1) 04899-47021 (1) 08887-02809 (2) 04899-47060 (1) 08826-00100 (1) 90430-18008 (1) 00272-SLLC2 (1)	ORDER INVERTER 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.

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

[2014 Prius V: Intelligent Power Module Transistor Removal](#)

[2015 Prius V: Intelligent Power Module Transistor Removal](#)

[2016 Prius V: Intelligent Power Module Transistor Removal](#)

[2017 Prius V: Intelligent Power Module Transistor Removal](#)

VII. DETERMINE CID STATUS

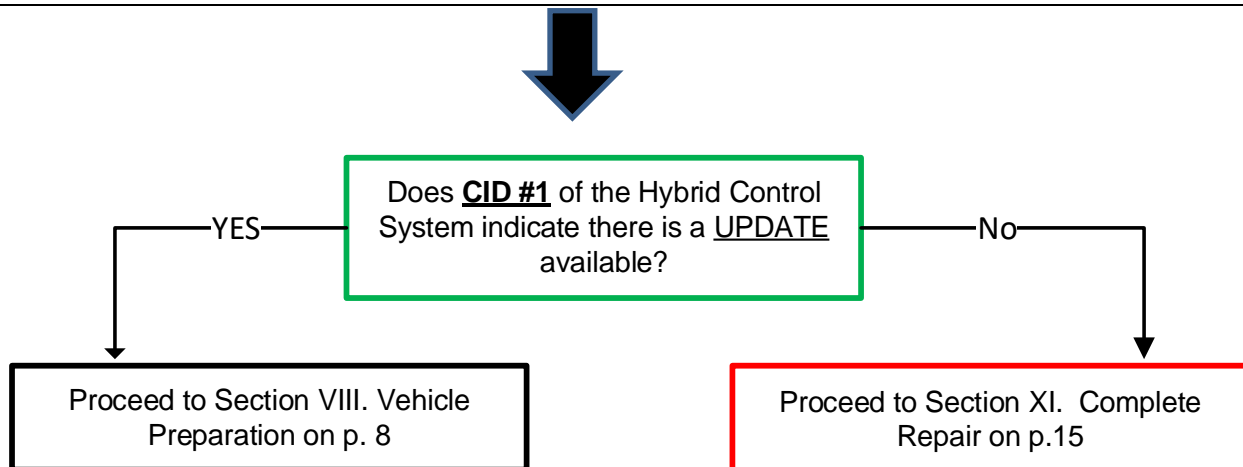
1. DETERMINE STATUS of HYBRID CONTROL SYSTEM CIDs

- Locate the Update column for the Hybrid Control System in the Stored Data tab.
- Determine the status of CID's #1 for the Hybrid Control ECU; indicated by a **YES** or **NO** in the Update column.

The screenshot shows the Techstream interface for a 2014 Prius. The 'Stored Data' tab is selected. The 'Update' column for the Hybrid Control system is highlighted, showing 'Yes' for CID #1. Red annotations point to 'Stored Data', 'Hybrid Control', 'CID's #1', and 'Status of available Update'.

System	RoB	Calibration	Update
Engine and ECT	-	34754000	No
	-	A4701600	No
	-	896B34747100	Yes
	-	896B57602000	No
	-	898844708200	No
	-	898844709200	No
	-	-	-
Cruise Control	-	-	-
Tire Pressure Monitor	-	-	-
ABS/VSC/TRAC	-	F152647216	No
EMPS	-	JCU315F0	No
Transmission Control	-	-	-

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



VIII. VEHICLE PREPARATION

The ECU reprogramming 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 DCA-800, 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:

- 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.



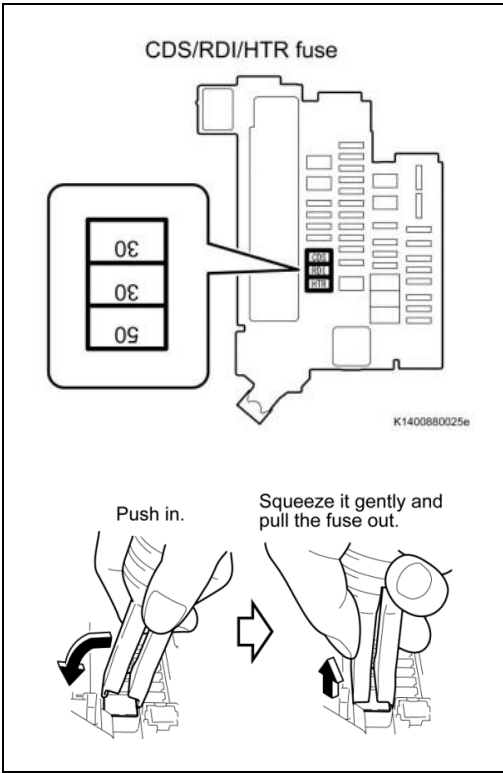
The Techstream battery must be maintained during the update procedure. If necessary, plug the Techstream into a 120v outlet to ensure that a failure does not occur.

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

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).

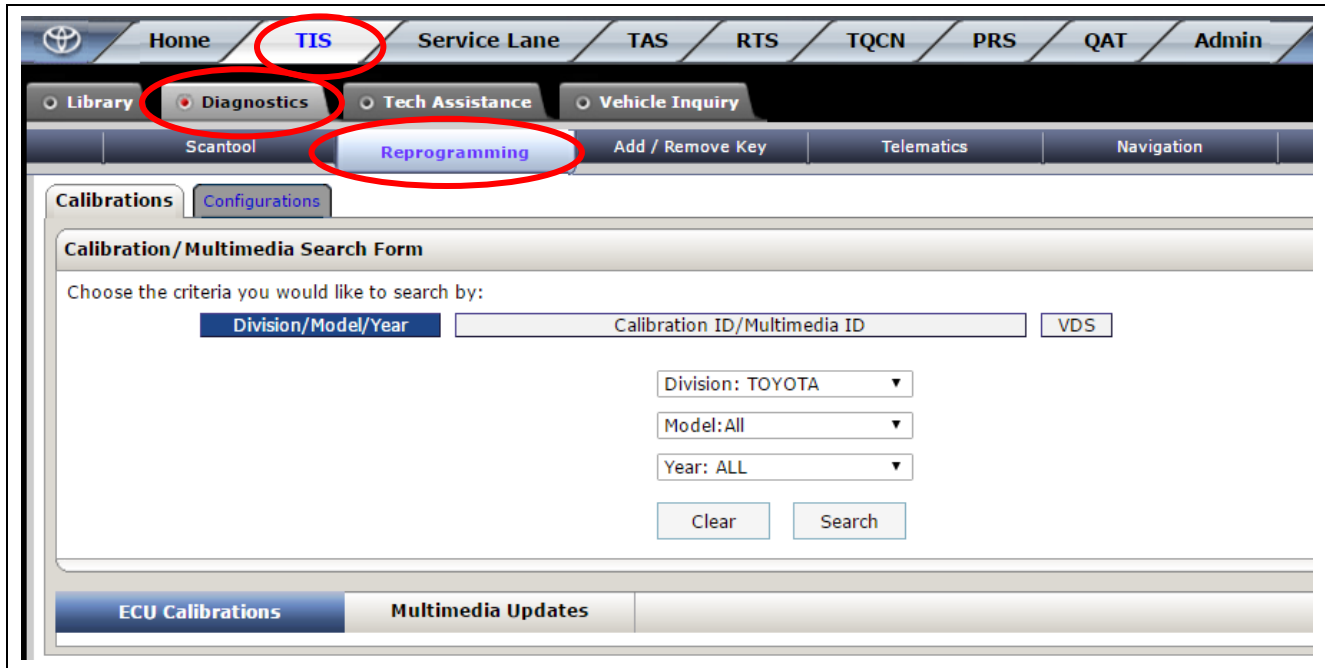
	<p><u>Permanent damage to the ECUs can happen if these fuses are not removed.</u></p>
	<p>Removing these fuses will stop the vehicle from performing onboard diagnostic tests during the update, which could cause the update to fail and damage the ECU.</p>

IX. CUWC APPLICATION

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

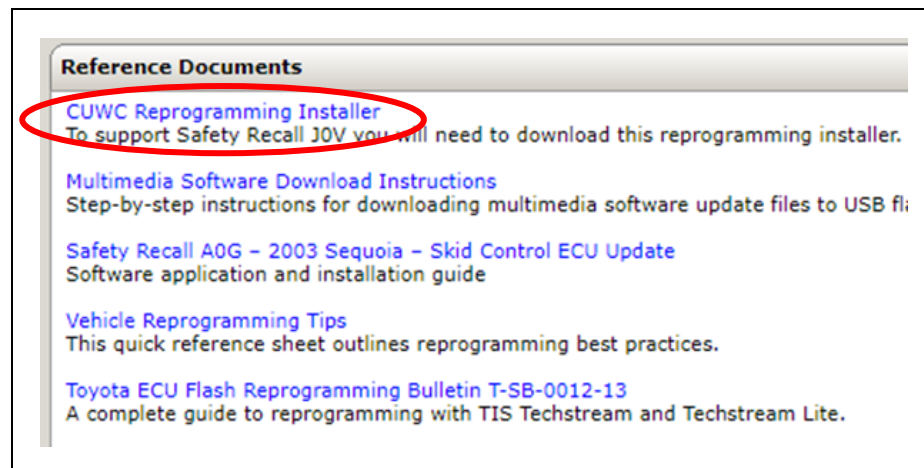
a. In TIS, select the following:

- 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.

(cont. on next page)

	<p><u>Permanent damage to the ECUs 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 vehicle's 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 CIDs 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>

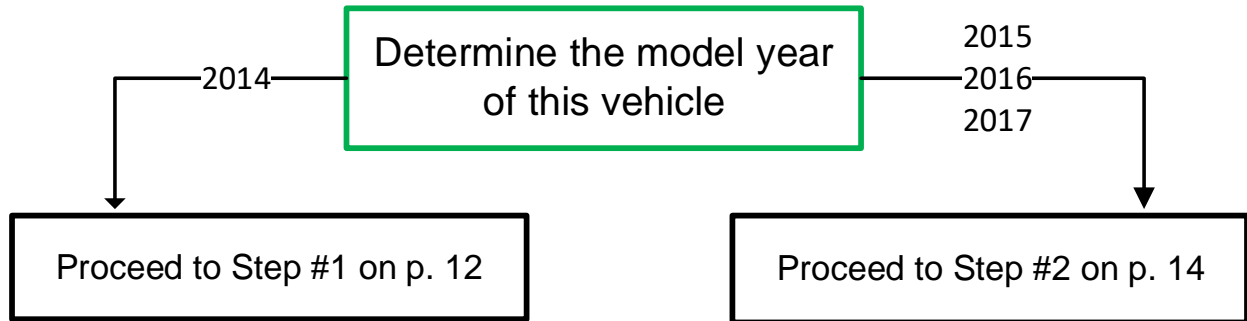
- **Ne pas utiliser Techstream.**
- **Lorsque l' application CUWC ou le PC s' arrete inopinement, veuillez restaurer l' ECU depuis l' application CUWC.**

<Cuidado>

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

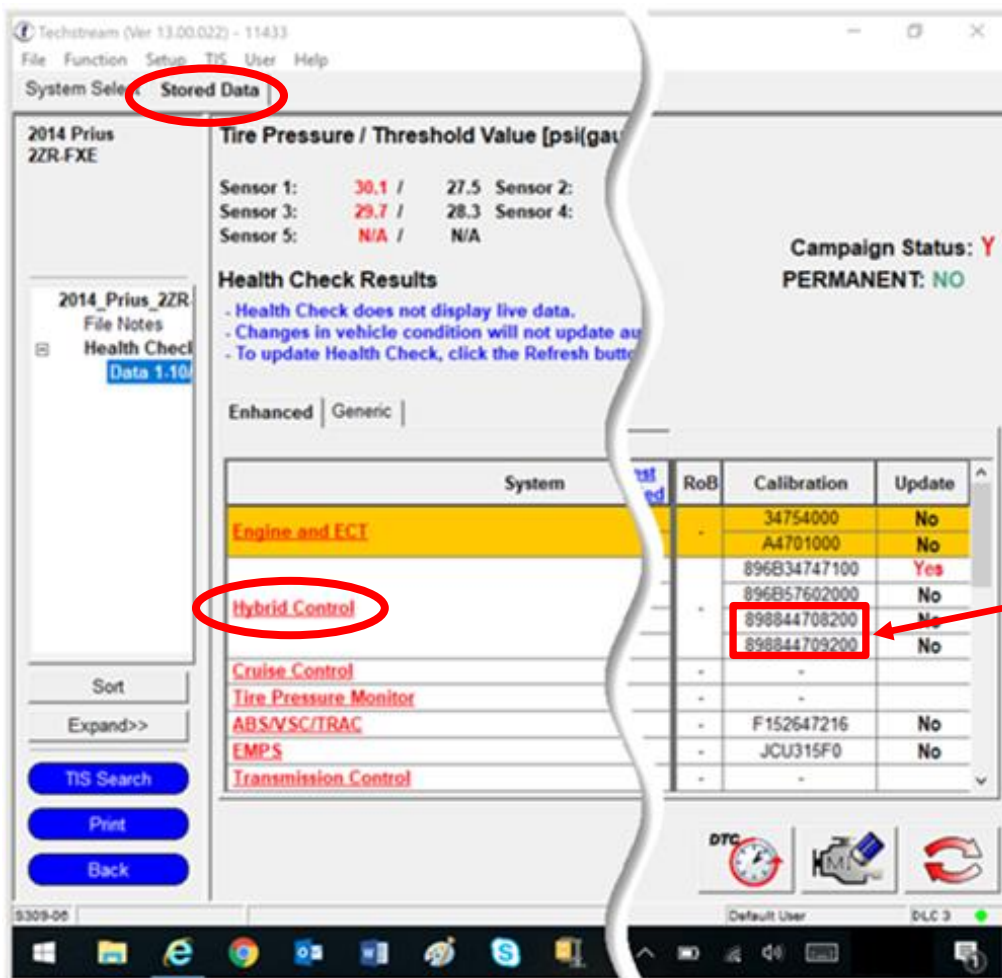
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X. CID INSTALLATION



1. 2014 MY: INSTALLATION OF CIDS

- Identify the Hybrid Control CID's #3 & #4 from the Stored Data tab.
- Referencing the chart on the next page, identify the matching CID #3 & #4.
- Select the Group # link (blue text) to begin the update process.
- Follow the instruction on the screen to complete the installation.
- When CID installation is completed, skip to Section XII. COMPLETE REPAIR on p. 15.



2014 MY ONLY

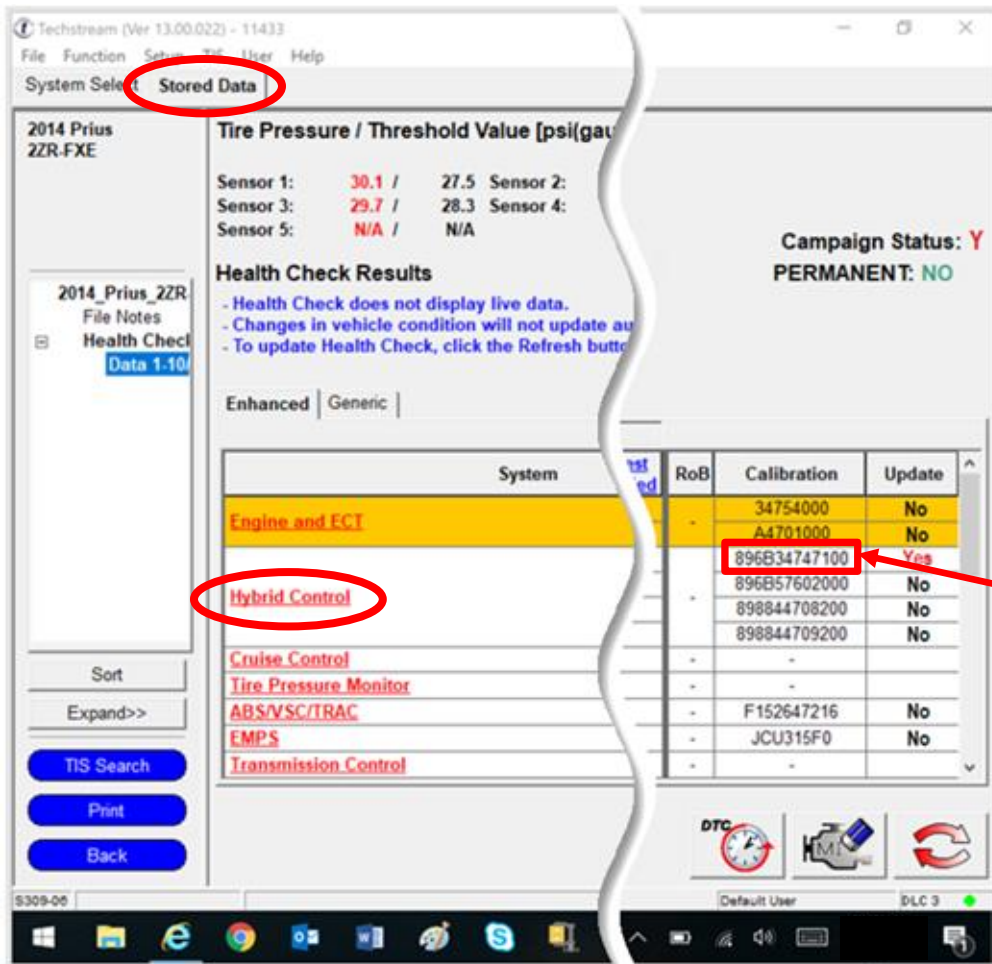
Diagram shown if from a Prius. Prius V will be similar.

Model	CID #	Original	Current
2014 Prius V	CID #1	896B34711000	<u>2014 Prius V #1</u> 896B34761100 896B54705100 898844706400 898844707400
		896B34711100	
		896B34727000	
		896B34727100	
		896B34727200	
		896B34727300	
		896B34761000	
		896B34764000	
	CID #2	896B54705000	
		896B54705100	
		896B54709000	
		896B54712000	
	CID #3	89884470 6100	
		89884470 6200	
		89884470 6300	
		89884470 6400	
CID #4	89884470 7100		
	89884470 7200		
	89884470 7200		
	89884470 7400		

2014 Prius V	CID #1	896B34711000	<u>2014 Prius V #2</u> 896B34761100 896B54705100 898844712300 898844713300
		896B34711100	
		896B34727000	
		896B34727100	
		896B34727200	
		896B34727300	
		896B34761000	
		896B34764000	
	CID #2	896B54705000	
		896B54705100	
		896B54709000	
		896B54712000	
	CID #3	89884471 2000	
		89884471 2100	
		89884471 2200	
		89884471 2300	
CID #4	89884471 3000		
	89884471 3100		
	89884471 3200		
	89884471 3300		

2. 2015 – 2017 MY: INSTALLATION OF CIDS

- a. Identify the Hybrid Control CID #1 from the Stored Data tab.
- b. Referencing the correct chart below, identify the chart that has the matching CID #1.
- c. Select the link (blue text) on that row to begin the update process.
- d. Follow the instruction on the screen to complete the installation.



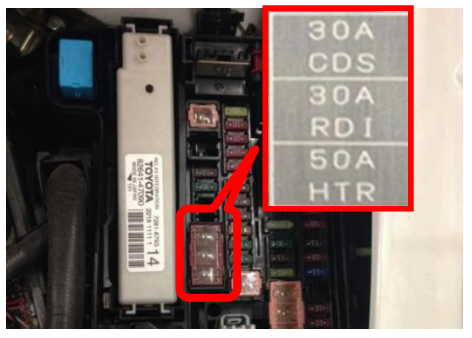
**2015 – 2017
MY ONLY**

CID #1

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

Model	CID #	MY	Original	Current
2015 - 2017 Prius V	CID #1	2015-2016	896B347 550 00	896B34755100
		2017	8998347 530 00	899834753100

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 DTCs that may have set during the re-flash procedure.
 - d. Re-run the Health Check to confirm that no DTCs reappear.



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

3. CONFIRM CID UPDATE

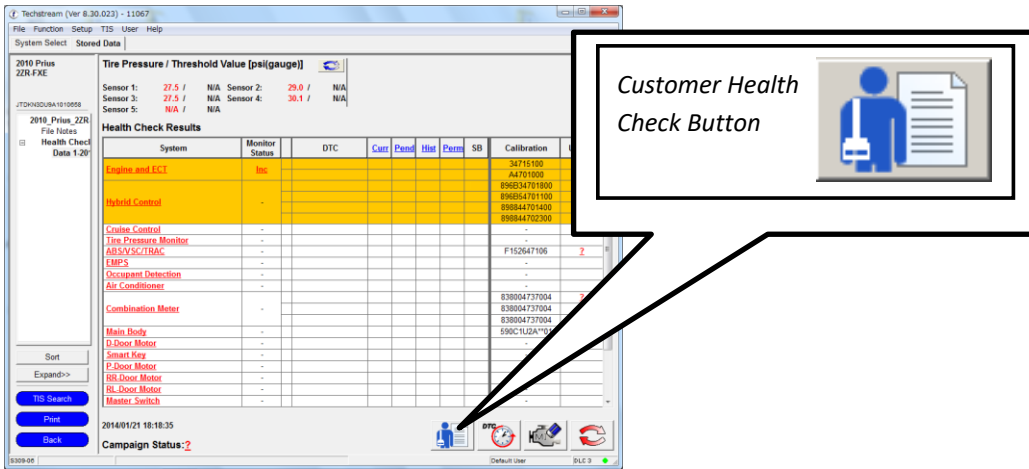
- a. On the Stored Data tab, confirm the following for the Hybrid Control System:
 - The Update column lists “No” for CID #1

The screenshot shows the Techstream interface for a 2014 Prius. The 'Stored Data' tab is active. Under 'Health Check Results', it states: '- Health Check does not display live data.', '- Changes in vehicle condition will not update au...', and '- To update Health Check, click the Refresh butto...'. Below this is a table with columns: System, RoB, Calibration, and Update. The 'Hybrid Control' system is highlighted, and its CID #1 (896B34747100) is circled in red. The 'Update' column for this CID is also circled in red and labeled 'CID #1' and 'MUST say "NO"'. Other systems listed include Engine and ECT, Cruise Control, Tire Pressure Monitor, ABS/VSC/TRAC, EMPS, and Transmission Control.

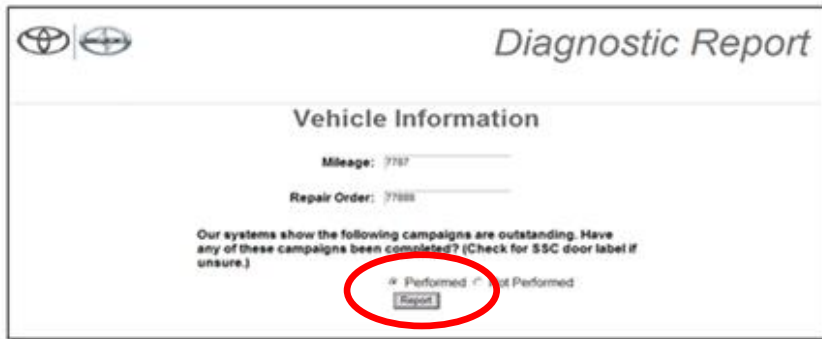
System	RoB	Calibration	Update
Engine and ECT	-	34754000	No
	-	A4701000	No
Hybrid Control	-	896B34747100	No
	-	896B57602000	No
	-	898844708200	No
	-	898844709200	No
Cruise Control	-	-	-
Tire Pressure Monitor	-	-	-
ABS/VSC/TRAC	-	F152647216	No
EMPS	-	JCU315F0	No
Transmission Control	-	-	-

4. PRINT CUSTOMER HEALTH CHECK REPORT

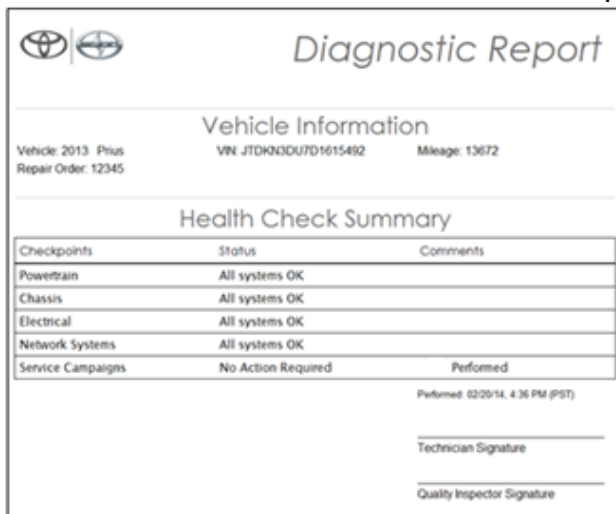
- a. From the Stored Data tab, select the Customer Health Check Report button (TIS will launch when button is pressed).



- b. Log in to TIS.
- c. Input Vehicle Mileage and Repair Order number.
- d. Check the "Performed" campaign button for campaign 20TA10.
- e. Select the Report button.



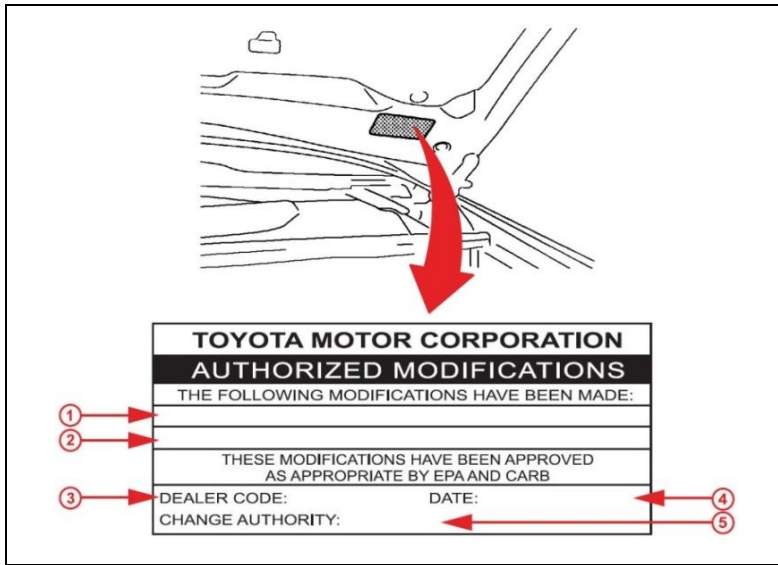
- a. Confirm Customer Health Check Report information is correct.



- b. Print Customer Health Check Report from TIS.
- c. 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 IDs)
3	(Dealer Code)
4	(Date Completed)
5	Safety Recall 20TA10

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

Hybrid Control	896B34747100
	896B57602000
	898844708200
	898844709200

◀ VERIFY REPAIR QUALITY ▶

- Confirm all ECM Calibration has been updated successfully to the NEW CID.
- 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

