

TECHNICAL INSTRUCTIONS

FOR

SPECIAL SERVICE CAMPAIGN 22TC11

SOFTWARE UPDATE – DC COLD WEATHER CHARGING

CERTAIN 2023 MODEL YEAR bZ4X

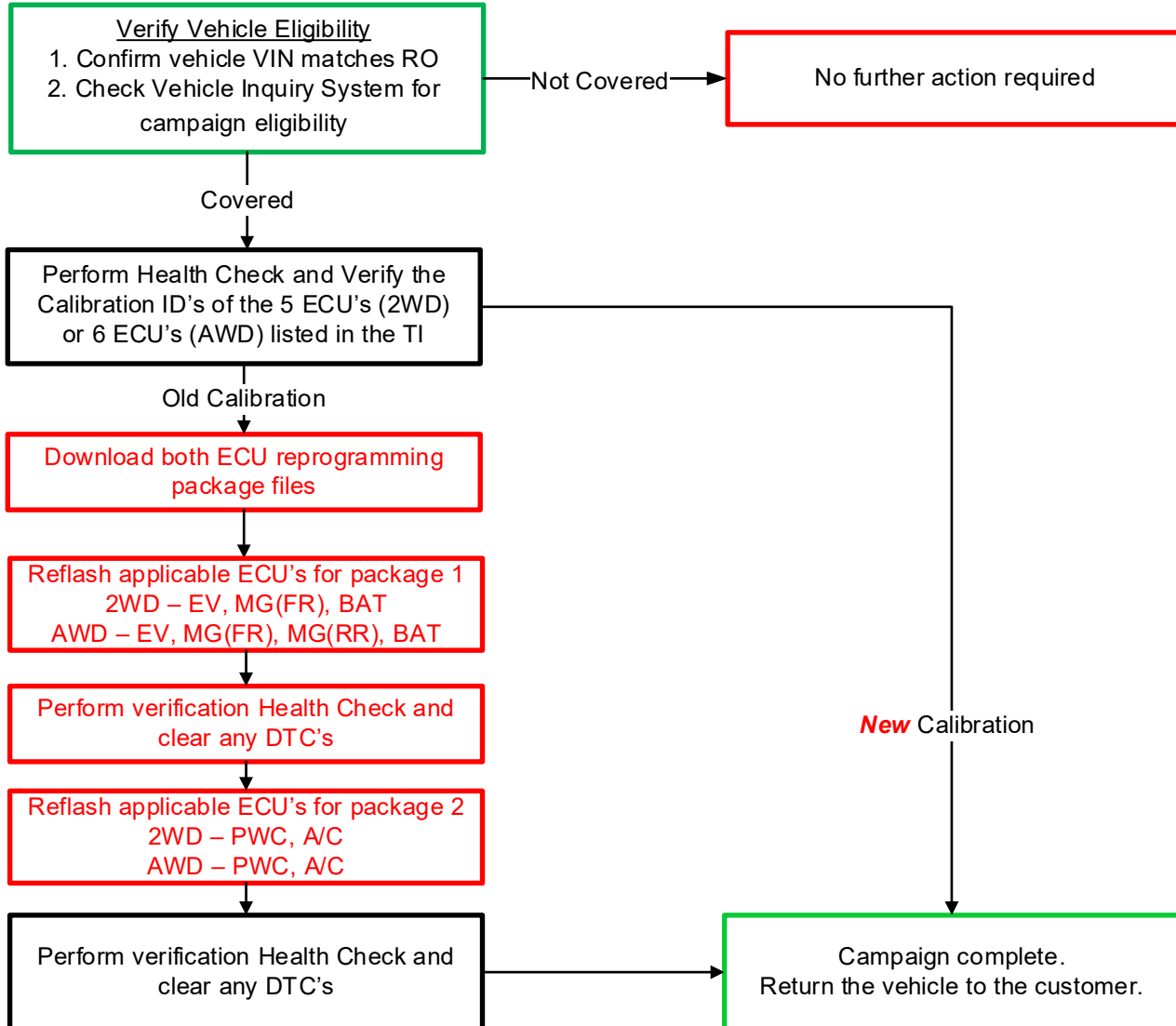
The repair quality of covered vehicles is extremely important to Toyota. All dealership technicians performing this repair are required to successfully complete the most current version of the E-Learning course “Safety Recall and Service Campaign Essentials”. To ensure that all vehicles have the repair performed correctly; technicians performing this repair are required to currently hold at least one of the following certification levels:

- Expert Technician (Hybrid)

Always check which technicians can perform the repair by logging on to <https://www.uotdealerreports.com>. It is the dealership’s responsibility to select technicians with the above certification level or greater to perform this 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

The flow chart is for reference only. **DO NOT** use it in place of the full technical instructions. Follow **ALL** steps as outlined in the full technical instructions to confirm the campaign is completed correctly.



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 Limited Service Campaign, and that it has not already been completed.

NOTICE:

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

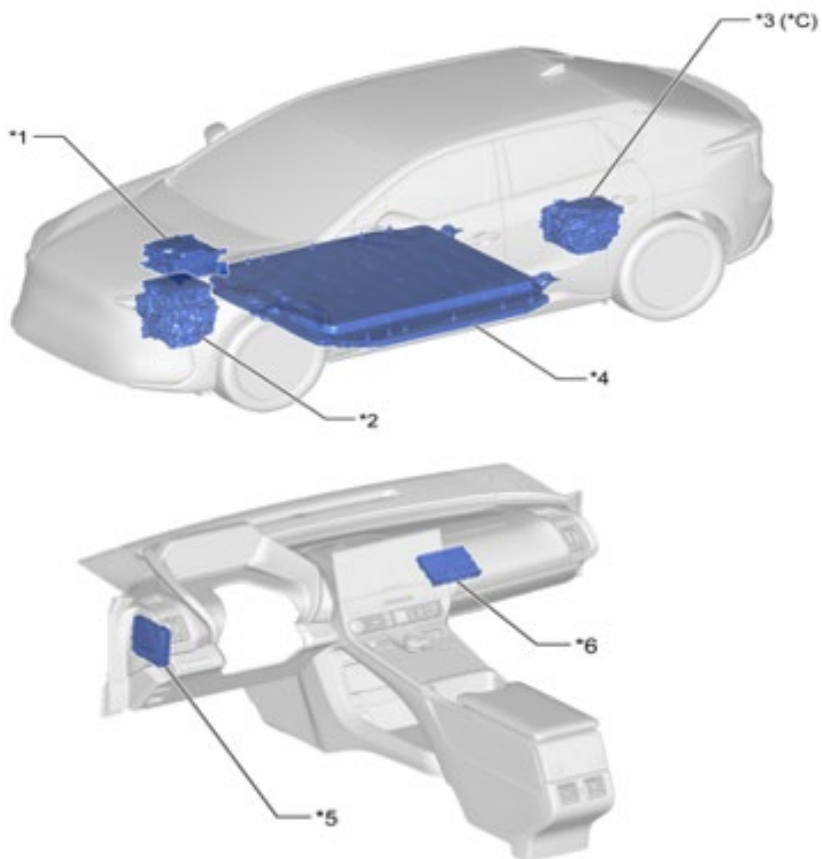
A. TOOLS & EQUIPMENT

- Standard Hand Tools
- T-SB-0134-16
- Techstream ADVi / Techstream 2.0 / Techstream Lite
- DCA-8000 Battery Diagnostic Station
- T-SB-0107-20

IV. BACKGROUND

A software update has been developed for certain 2023 model year bZ4X vehicles. Included in the update is an improvement of DC fast charging performance during low temperatures.

The software update will require reprogramming each of the following ECUs using Techstream: EV, MG, BAT, PWC and A/C.



*C	for AWD	-	-
*1	PWC ECU (ELECTRIC CONVERTER UNIT ASSEMBLY)	*2	MG ECU (FR E-AXLE ASSEMBLY)
*3	MG ECU (RR E-AXLE ASSEMBLY)	*4	BAT ECU (EV SUPPLY BATTERY ASSEMBLY)
*5	EV ECU (EV CONTROL ECU)	*6	A/C ECU (AIR CONDITIONING AMPLIFIER ASSEMBLY)

V. SAFETY PRECAUTIONS

Critical

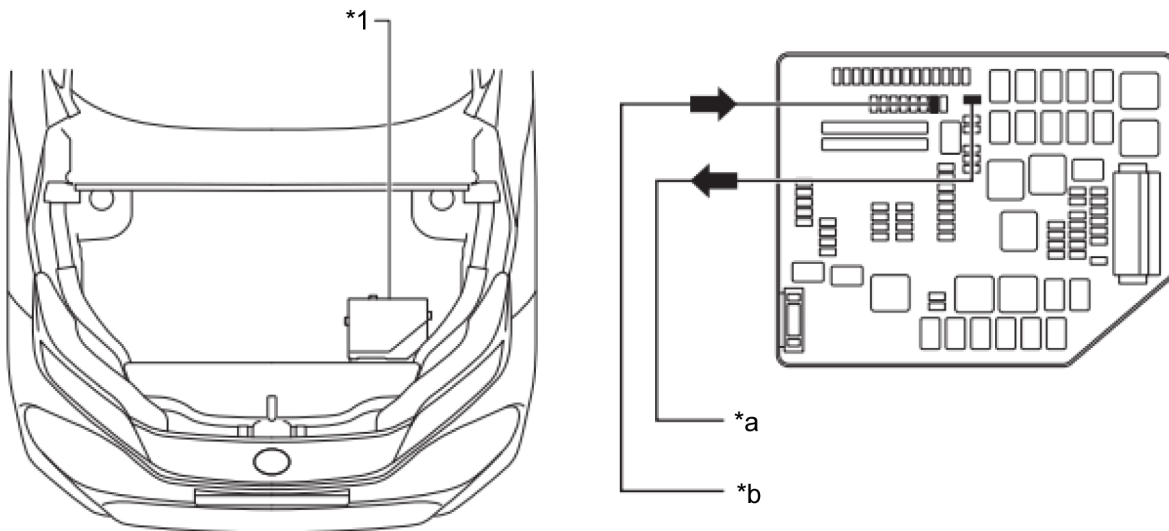
CRITICAL INFORMATION - READ THOROUGHLY

An ECU could be damaged if an error occurs in the communication while reprogramming the ECU. Confirm all work is performed as described in these instructions.

1. CONFIRM TECHSTREAM IS THE LATEST VERSION

2. CONFIRM D/C CUT (30A) FUSE HAS BEEN INSTALLED

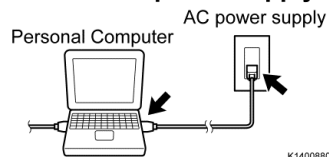
- a) In order to perform ECU reprogramming the cut fuse must be in location *b. If Pre-Delivery Service (PDS) was not performed on the vehicle, please remove cut fuse from location *a and install into location *b.



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*1	Relay Block	-	-
*a	Remove D/C CUT FUSE (30A)	*b	Install D/C CUT FUSE (30A) (Original Location)

Be sure to connect the personal computer to an external AC power supply.



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3. STABILIZE THE POWER TO THE PERSONAL COMPUTER SIDE

- a) Be sure to connect the personal computer to an external AC power supply.

NOTICE:

The ECU could be damaged if the battery voltage of the personal computer drops while reprogramming.

Turn off the screen saver and power saving mode.



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- b) Turn off the screen saver and power saving mode of the personal computer so that the power to the hard disk is kept supplied.

NOTICE:

If the screen saver or power saving mode launches while reprogramming, the communication may be disconnected, resulting in the damage of the ECU.

DO NOT block the ventilation opening.



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- c) **DO NOT** block the ventilation opening for the cooling fan of the personal computer.

NOTICE:

If the ventilation opening for the cooling fan is blocked with a sheet cover or the like, the personal computer may be heated excessively, causing the operation of the personal computer to stop.

Due to the stop of the operation, the communication for reprogramming signals could be stopped, resulting in the damage of the ECU.

VI. CALIBRATION ID VERIFICATION



1. CHECK FOR DTC'S

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

NOTICE:

This Campaign covers only the software update to the ECUs detailed in these instructions. It does not cover the diagnosis or replacement of any other systems on the vehicle.

2. CHECK CURRENT CALIBRATION

- Locate the calibration ID of the ECU's that require reprogramming to determine if an update is available.
- Determine the status of an available update; indicated by a YES or NO.

HINT:

If the CID's indicate 'Yes', proceed with the update procedure.

The ECUs that require reprogramming

(●: Require, -: Do not require)

Drive Type	EV ECU (EV)	MG ECU (Motor Generator)	MG ECU (Rear Motor Generator)	BAT ECU (EV Battery)	PWC ECU (Plug-in Control)	A/C ECU (Air Conditioner)
2WD	●	●	-	●	●	●
AWD	●	●	●	●	●	●

The screenshots show the following components and their calibration status (indicated by callouts):

- *1 EV ECU:** EV Battery status is *****.
- *2 Motor Generator:** Motor Generator status is *****.
- *3 Rear Motor Generator:** Rear Motor Generator status is *****.
- *4 EV Battery:** EV Battery status is *****.
- *5 Plug-in Control:** Plug-in Control status is *****.
- *6 Air Conditioner:** Air Conditioner status is *****.

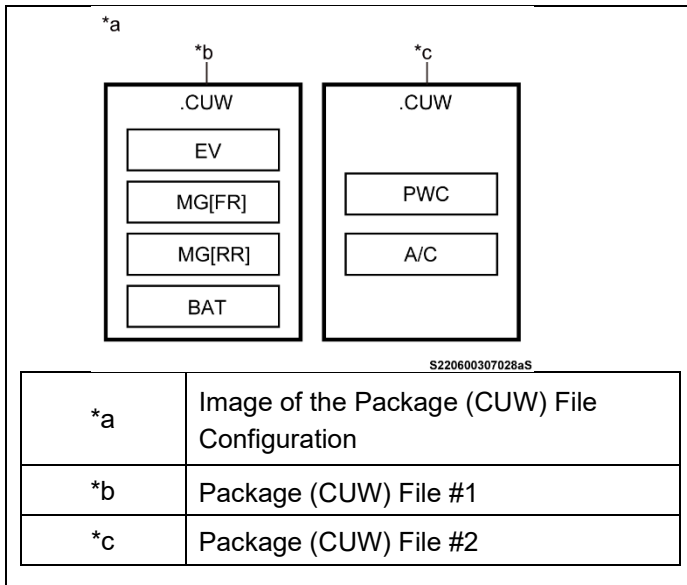
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*1	EV ECU	*2	MG ECU
*3	MG ECU (Only for 4WD models)	*4	BAT ECU
*5	PWC ECU	*6	A/C ECU

Notice: You will need to scroll the ECU menu to find all ECU cal.

Calibrations				
Drive Type	System	Current Calibration ID	NEW Calibration ID	Reprogramming Package File
2WD	EV	8A2524237000	8A2524224200	8A2524224200 / 898844236000 / 8989F4601100
	Motor Generator	8A2814201200	898844236000	
	EV Battery	8989F4204100	8989F4601100	
	Plug-in Control	892634212000	892634218000	892634218000 / 8865F4213100
	Air Conditioner	8865F4213002	8865F4213100	
AWD	EV	8A2524238000	8A2524225200	8A2524225200 / 898844237000 / 898844238000 / 8989F4210200
	Motor Generator	8A2814202200	898844237000	
	Rear Motor Generator	8A2914201200	898844238000	
	EV Battery	8989F4210100	8989F4210200	
	Plug-in Control	892634212000	892634218000	892634218000 / 8865F4213100
	Air Conditioner	8865F4213002	8865F4213100	

VII. DOWNLOAD ECU REPROGRAMING PACKAGE FILES



1. Download and save the two reprogramming package files (.cuw) applicable to the vehicle.
 - 2WD Package 1 (EV, MGFR, BAT)
 - 2WD Package 2 (PWC, A/C)
 - AWD Package 1 (EV, MGFR, MGRR, BAT)
 - AWD Package 2 (PWC, A/C).
- a) The CUW file is a package file that contains several programs that reprogram ECUs, and one CUW package is capable of reprogramming multiple ECUs successively

NOTICE:
All the ECUs must be reprogrammed.

◀ CRITICAL MESSAGE ▶

It is critical that [T-SB-0134-16](#) and [T-SB-0107-20](#) in addition to the Technical Instructions for this LSC are followed. This TSB outlines all steps necessary to prevent reprogramming failure. Toyota will not provide reimbursement coverage for reprogramming failures if this TSB is not followed. If you have a reprogramming failure that requires ECU replacement and the Technical Instructions and TSB were followed correctly, please create a case with the Technical Assistance Hotline documenting all information related to the failure. If sufficient reporting is received related to re-flash failure, there will be consideration for reimbursement.

VIII. VEHICLE PREPERATION

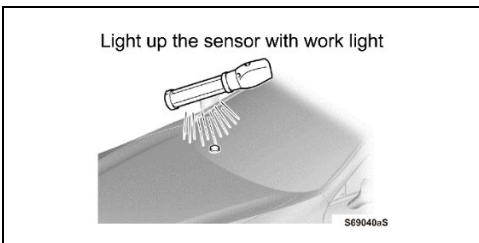
1. PLACE VEHICLE IN “POWER ON”, “READY OFF”

- a) Press the power button until “POWER ON” and “Not Ready to Drive” is displayed on the dash



2. CONFIRM ALL ELECTRICAL LOADS ARE OFF

- Vehicle in the IG position (READY OFF).
- Transaxle in Park.
- Parking brake engaged.
- Turn off all electrical accessories (i.e. climate control, audio system, etc.)
- Headlight switch in the DRL OFF position. (w/ DRL OFF position)
- Windshield wiper switch in the OFF position.



- a) When the vehicle has no “OFF position” in the light control switch:
 - 1) Turn the IG ON.
 - 2) Set the light control switch to the AUTO position and make sure that the exterior lights are turned on.
 - 3) Light up the automatic light control sensor with work light to keep the exterior lights turned off.

3. CONNECT THE 12V BATTERY TO A POWER SUPPLY

- a) Connect the DCA-8000 or other type of a power supply (not a battery charger) to the 12 V battery.
- b) Tap the Reflash icon from the Main Menu screen of the DCA-8000.



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. This procedure takes 2 hours with the vehicle on and battery power supply is crucial.

NOTICE:

A power supply must be connected directly to the 12V battery terminals and NOT the remote jump posts under the hood (if equipped).

4. VERIFY TECHSTREAM SETUP

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

Critical

The Techstream's battery voltage must also be maintained during the re-flash procedure. Plug the Techstream into a 120 v outlet during this procedure. This procedure takes 2 hours with the Techstream on and the battery power supply is crucial.

NOTICE:

If the Techstream communication with the vehicle fails during the re-flash procedure, the ECU will be damaged.

IX. UPDATE CALIBRATION

NOTICE:

While reprogramming, keep IG ON. Never turn the IG off or ENGINE-START.

As reprogramming completes in approximately a maximum of five minutes per ECU, stay near the vehicle and

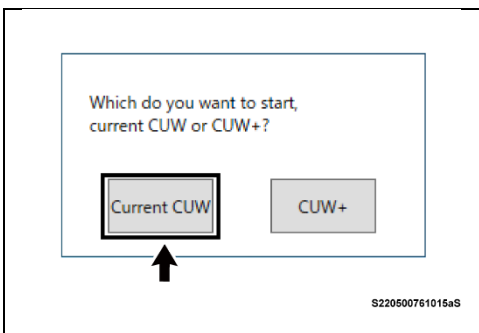
DO NOT allow anyone to operate the vehicle or Techstream in order to prevent troubles from occurring.

Pressing the "Cancel" button or the "X" button on the top right means to cancel reprogramming and could damage the ECU while reprogramming. Be sure to press "Retry" to continue reprogramming.

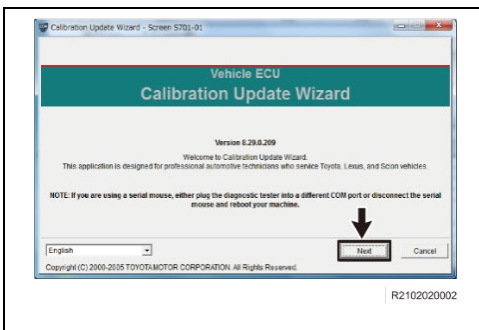


1. DOUBLE-CLICK THE DOWNLOADED PROGRAM PACKAGE

- a) Start reprogramming with package 1
- b) When all reprogramming steps are completed for package 1 you will restart the process with package 2

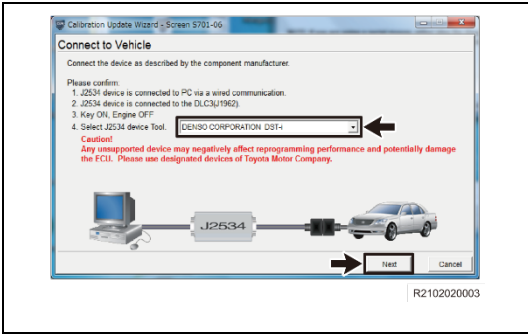


2. IF THE SCREEN ON THE LEFT IS DISPLAYED, CLICK "CURRENT CUW"



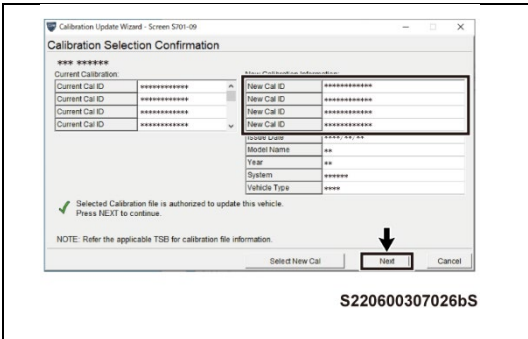
3. LAUNCH CALIBRATION WIZARD

- a) Select Next



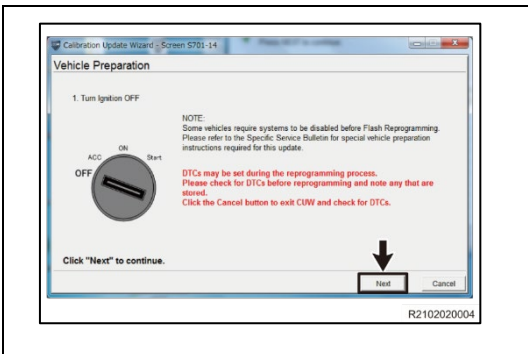
5. SELECT A DEVICE TOOL

- a) Select "Next"

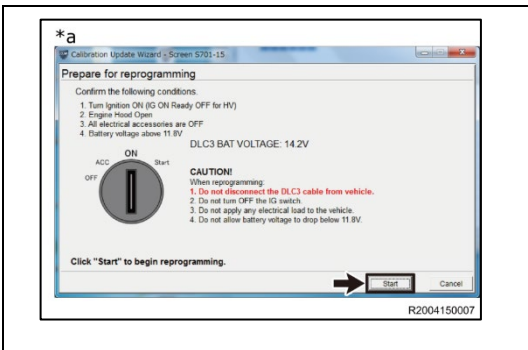


6. CONFIRM THAT EACH "NEW CAL ID" IS CORRECT, AND THEN CLICK ON "NEXT"

- a) Refer to calibration and reprogramming ID list in section VI step 2

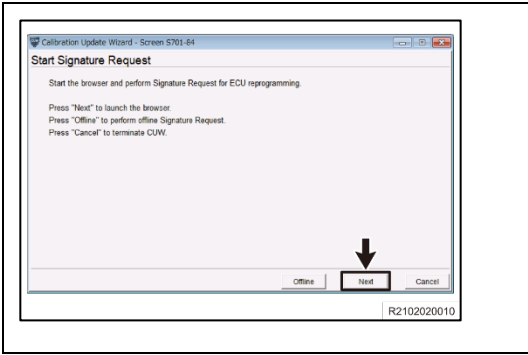


7. FOLLOW THE ON-SCREEN INSTRUCTIONS



8. FOLLOW THE ON-SCREEN INSTRUCTIONS

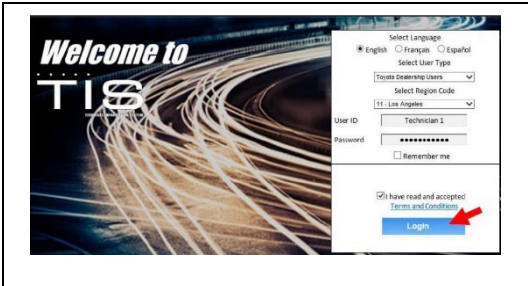
NOTICE: DO NOT turn the IG ON with the brake pedal depressed.



9. PERFORM SECURITY SIGNATURE TO THE SERVER

- a) Follow the instructions on screen

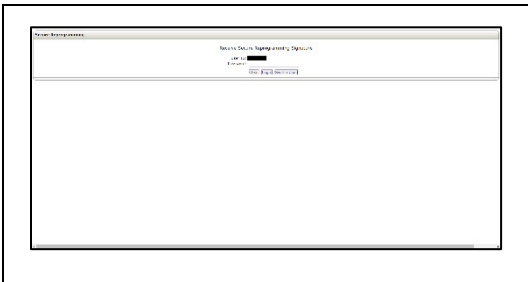
Hint: The reprogramming will not begin without the security signature



10. LOG IN TO TIS

- a) Input TIS login credentials and select "Login"

Note: This step requires internet.



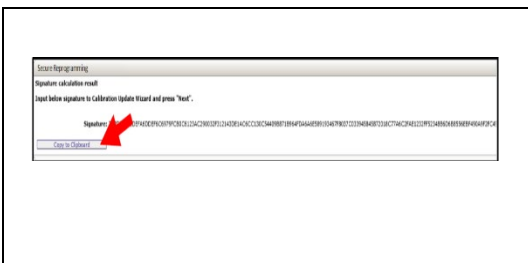
11. PERFORM SECURITY SIGNATURE TO THE SERVER

- a) Input TIS login credentials and select "Login"



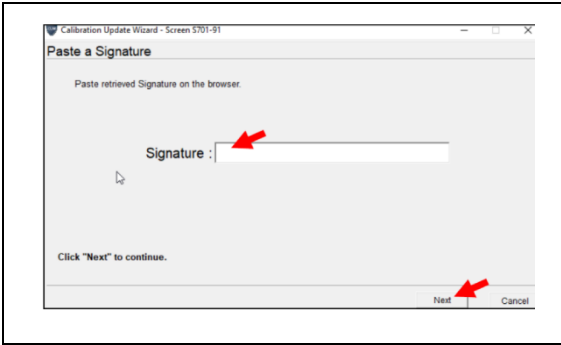
12. PERFORM SECURITY SIGNATURE TO THE SERVER

- a) Select "Send"



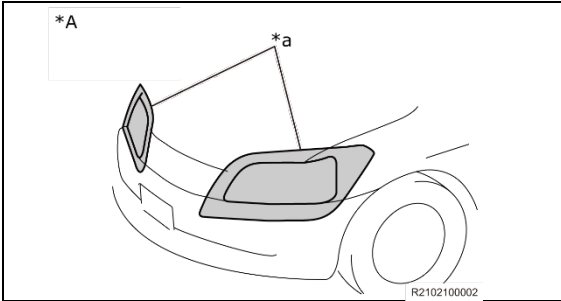
13. COPY SIGNATURE FROM TIS

- a) Select "Copy to Clipboard"



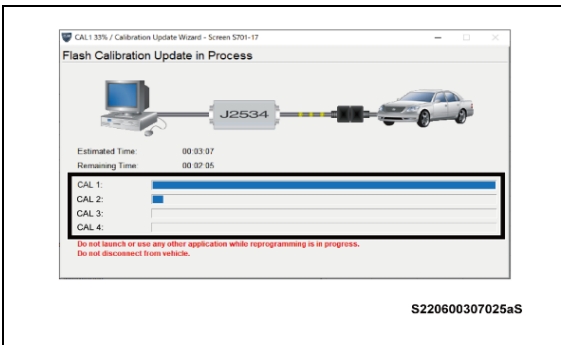
14. PASTE SIGNATURE INTO TECHSTREAM

- a) Select "Next"



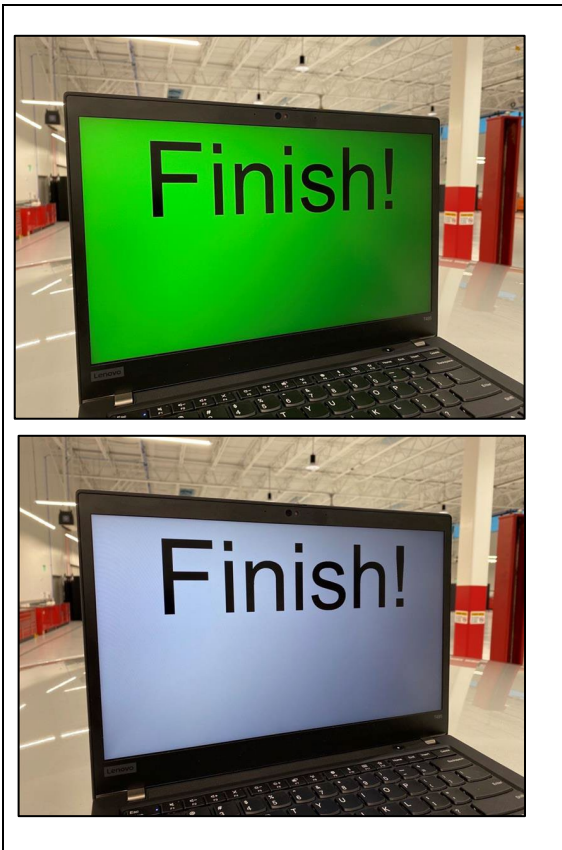
15. DUE TO COMMUNICATION BETWEEN ECUs BEING LOST DURING REPROGRAMMING THE HEADLIGHTS MAY TURN ON AS A FAIL-SAFE.

- a) **Do not** cover the headlights
- b) If the headlights turn on they cannot be turned off



16. RECALIBRATION WILL NOW BEGIN

Notice: Only one ECU in the package will be reprogramed at a time.

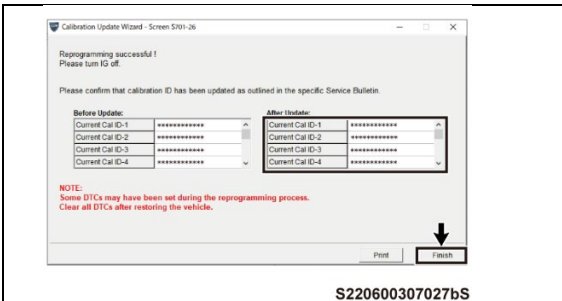


17. CALIBRATION UPDAED

- a) The following Screens will appear at the end of each reflash.
- b) Press a key or operate the mouse to close the window.

18. REPEAT PROGRAMMING STEPS FOR EACH CAL ID IN THE PROGRAM PACKAGE

- a) The IG OFF and ON operation and the security signature verification need to be conducted whenever the Calibration process finishes. Follow the instructions shown on the screen.



19. AFTER REPROGRAMMING, MAKE SURE THAT THE “CURRENT CAL ID” IS CORRECT

Date		*****	VIN	*****
ECU (System) That Needs Reprogramming		*****	NEW Calibration ID	*****
		Reprogramming	Double Checking	
		Write your name below	Write your name below	
		*****	*****	
14 Real (ECU) Reference	EV (EV)	8A2524225200	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	MG ECU (Motor Generator)	898844237000	<input type="checkbox"/>	<input type="checkbox"/>
	MG ECU (Rear Motor Generator)	898844238000	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	BAT ECU (EV Battery)	8989F4210200	<input type="checkbox"/>	<input type="checkbox"/>
20 Real (ECU) Reference	PWG ECU (Plug-in Control)	892634218000	<input type="checkbox"/>	<input type="checkbox"/>
	A/C ECU (Air Conditioner)	8865F4213100	<input type="checkbox"/>	<input type="checkbox"/>
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20. USE THE CHECKSHEET TO TRACK UPDATES AND CONFIRM ALL CAL IDS HAVE BEEN UPDATED

a) Check the corresponding box off on the check sheet as the reprogramming has finished. (Make a copy of the applicable check sheet located in the appendix and use it)

*a **DO NOT** skip reprogramming.

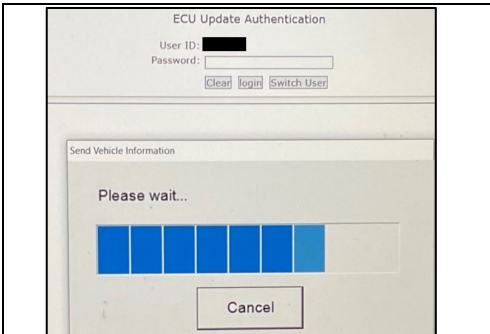
X. SEND VEHICLE INFORMATION



1. PERFORM VERIFICATION HEALTH CHECK

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

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



2. COMPLETE ECU UPDATE AUTHENTICATION

- a) Input TIS Credentials

HINT: Health check will complete once TIS credentials have been entered

Repeat the programming steps for the remaining ECUs (systems) using the downloaded reprogramming package 2 (.cuw) files.

Performed Task	Next Action and Reference
Reprogramming the ECUs with the package 1 (.cuw) files	Reprogram the remaining ECUs with the package 2 (.cuw) files. Go to "IX. UPDATE CALIBRATION".
Completed reprogramming with both CUW packages. (.cuw) file	ECU reprogramming is complete. Go to "XI. COMPLETE REPAIR".

XI. COMPLETE REPAIR

1. COMPLETE HEALTH CHECK AND CONFIRM CID UPDATE

a. On the Stored Data tab, confirm the following for each of the ECUs systems:

- The Calibration number has the “**New CID**” number.
- Refer to calibration and reprogramming ID list in section VI. for new CID numbers
- The Update column lists “No”

Example of a Calibration ID that does not have an update available.

System Select: **Stored Data**

001396 mile

Health Check Results

Enhanced | Generic

System	B	Calibration	Update	Configure
Circumference Monitoring Camera Control Module	●	8679F7820011	No	No
Front Recognition Camera	●	8679F7816021	No	No
Clearance Warning	●	8646F7805100	No	No
Smart Access	●	8934F7817020	No	No
SRS Airbag	●	021210040002	No	No
Main Body	●	8917F78220	No	No
Source Control	●	8AA117040000	No	No
	●	*****	No	No
	●	UZZZVVVVU2	No	No

Campaign Status PERMANENT: NO

Security Key: -

New CID's MUST be displayed

Update must say "No"

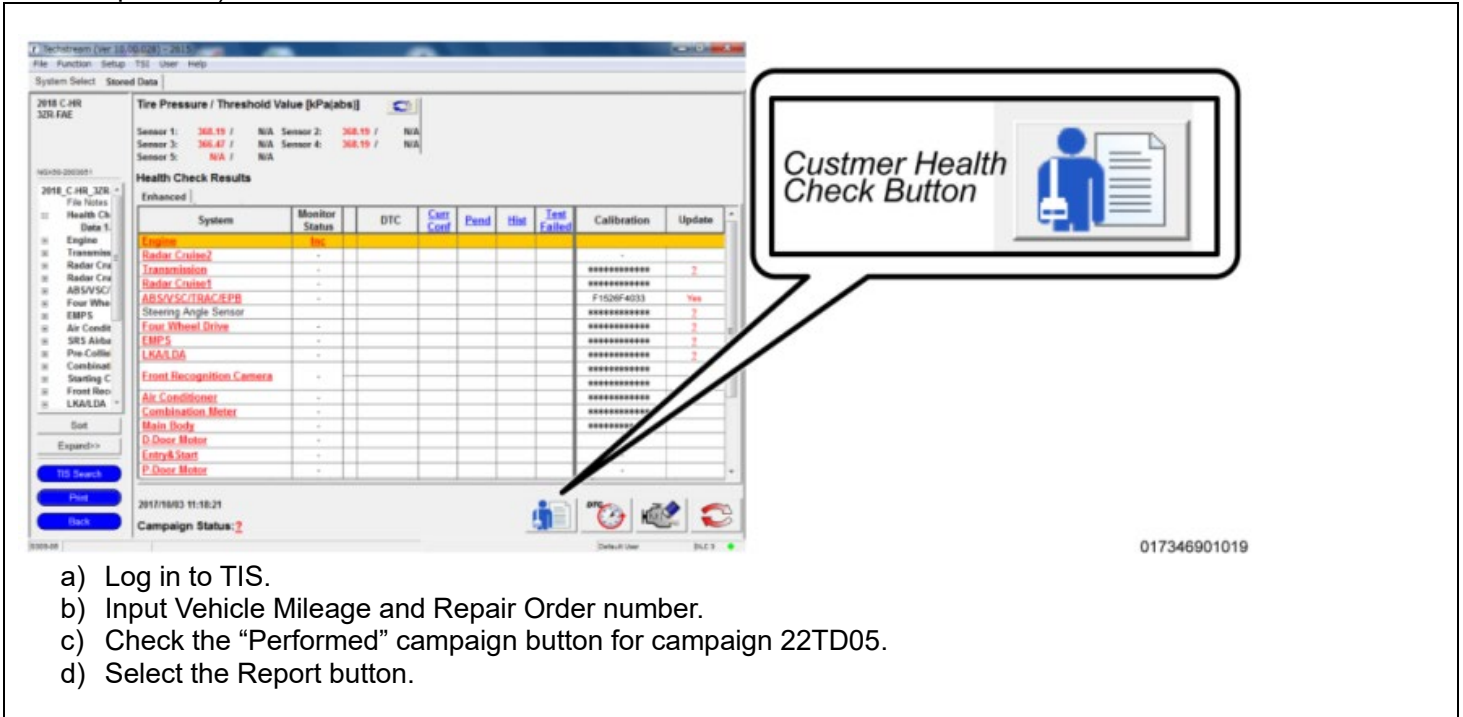
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Confirm the CID's have been updated successfully to the **NEW** CID's by someone other than the individual who performed the repair.

17. PRINT CUSTOMER HEALTH CHECK REPORT

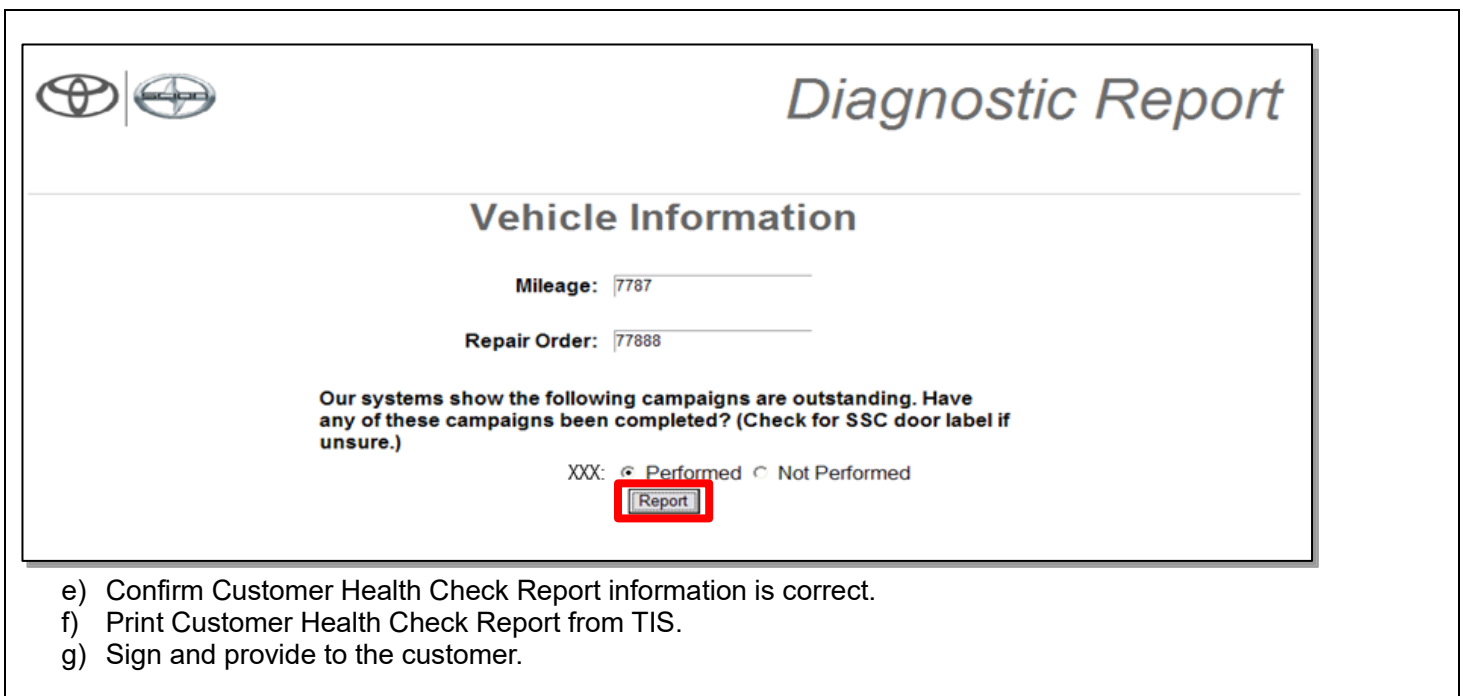
- a. From the Stored Data tab, select the Customer Health Check Report button (TIS will launch when button is pressed).



The screenshot shows the TIS software interface with the 'Health Check Results' table. The table has columns for System, Monitor Status, DTC, Calc Conf, Pend, Hist, Test Failed, Calibration, and Update. A callout box labeled 'Customer Health Check Button' points to the 'Report' button in the bottom right corner of the interface.

System	Monitor Status	DTC	Calc Conf	Pend	Hist	Test Failed	Calibration	Update
Engine	OK							
Radial Cruise2	-						*****	2
Transmission	-						*****	2
Radial Cruise1	-						*****	2
ABS/ESC	-						F1520F4033	Yes
Four Wheel Steering Angle Sensor	-						*****	2
EMPS	-						*****	2
Four Wheel Drive	-						*****	2
Air Condit	-						*****	2
SRS Airba	-						*****	2
Pre-Collis	-						*****	2
Combina	-						*****	2
Steering C	-						*****	2
Front Rec	-						*****	2
LKAS/LDA	-						*****	2
Suit	-						*****	2
D-Door Motor	-						*****	2
Entry Start	-						*****	2
P-Door Motor	-						*****	2

- a) Log in to TIS.
- b) Input Vehicle Mileage and Repair Order number.
- c) Check the "Performed" campaign button for campaign 22TD05.
- d) Select the Report button.



The screenshot shows the 'Diagnostic Report' form. The form has a header with the Toyota and Lexus logos and the title 'Diagnostic Report'. Below the header is the 'Vehicle Information' section, which includes fields for Mileage (7787) and Repair Order (77888). A message states: 'Our systems show the following campaigns are outstanding. Have any of these campaigns been completed? (Check for SSC door label if unsure.)'. Below this message are radio buttons for 'Performed' (selected) and 'Not Performed'. A red box highlights the 'Report' button.

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

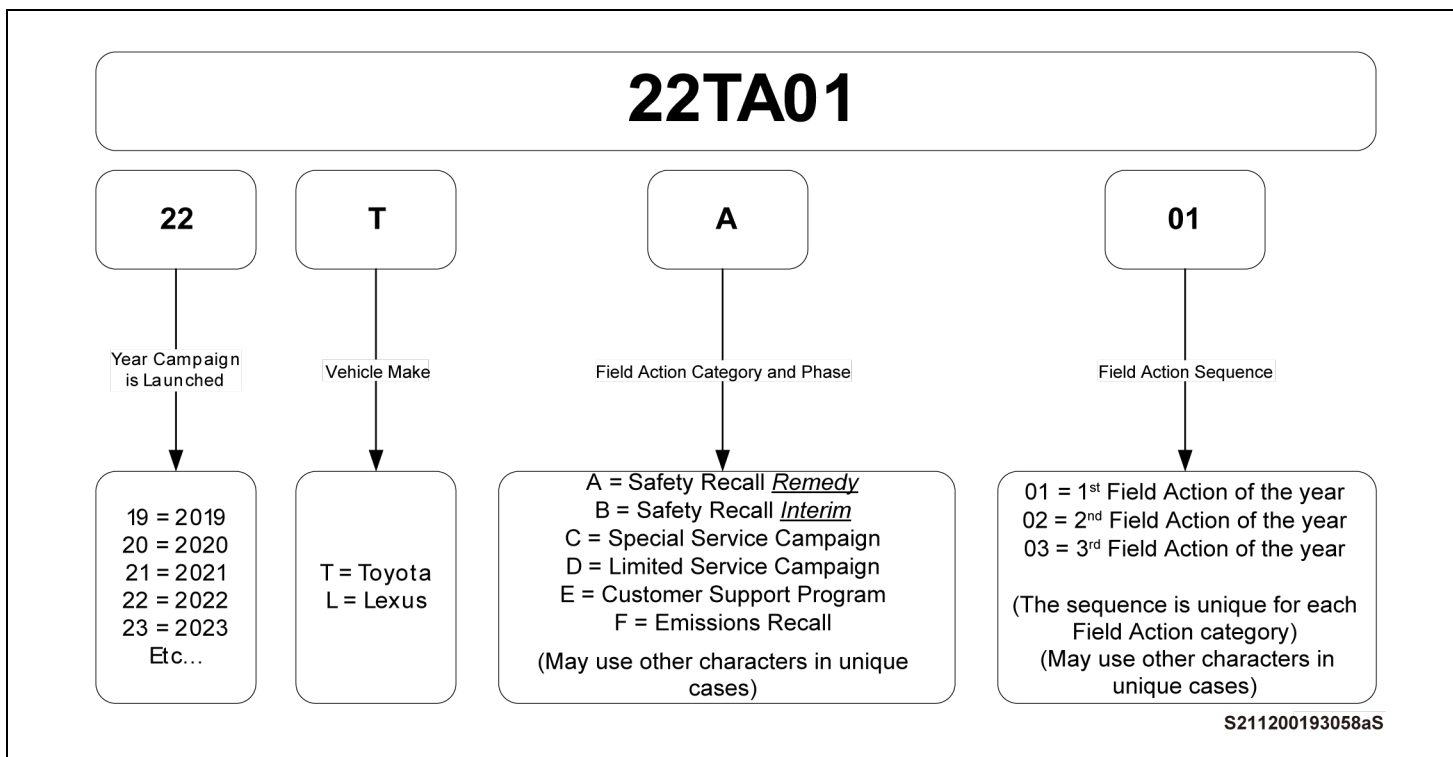
18. Disconnect DCA-8000

◀ VERIFY REPAIR QUALITY ▶

- Confirm the ALL Calibrations have been updated successfully to the NEW CID.
 - EV ECU
 - A/C ECU
 - PWC ECU
 - BATT ECU
 - MGFR ECU
 - MGRR ECU (AWD ONLY)
- Confirm there are no DTC's after the Calibration update.
- If you have any questions regarding this Campaign, please contact your regional representative

XII. APPENDIX

A. CAMPAIGN DESIGNATION DECODER



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

[Check Sheet] **2WD Models**

Date		VIN			
ECU (System) That Needs Reprogramming		<i>NEW</i> Calibration ID		Reprogramming	Double Checking
				Write your name below	Write your name below
Package (CUW) File #1	EV (EV)	8A2524224200			
	MG ECU (Motor Generator)	898844236000		<input type="checkbox"/>	<input type="checkbox"/>
	BAT ECU (EV Battery)	8989F4601100			
Package (CUW) File #2	PWC ECU (Plug-in Control)	892634218000		<input type="checkbox"/>	<input type="checkbox"/>
	A/C ECU (Air Conditioner)	8865F4213100			

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[Check Sheet] **AWD Models**

Date		VIN			
ECU (System) That Needs Reprogramming		NEW Calibration ID		Reprogramming	Double Checking
				Write your name below	Write your name below
Package (CUW) File #1	EV (EV)	8A2524225200		<input type="checkbox"/>	<input type="checkbox"/>
	MG ECU (Motor Generator)	898844237000			
	MG ECU (Rear Motor Generator)	898844238000			
	BAT ECU (EV Battery)	8989F4210200			
Package (CUW) File #2	PWC ECU (Plug-in Control)	892634218000		<input type="checkbox"/>	<input type="checkbox"/>
	A/C ECU (Air Conditioner)	8865F4213100			

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