

**\*\*\*\* All Dealers: Please watch for continuous updates to this procedure. \*\*\*\***

**Table of Contents - Links in this document are provided for all steps below**

Flowchart..... **Section A**

Repair Procedure..... **Section B**

**PHEV - Vehicle Inspection Procedure and Preparation for Repair**

1. Verify that the vehicle is within the following ranges and there is an Announced or OPEN 7024J campaign in eMDCS:

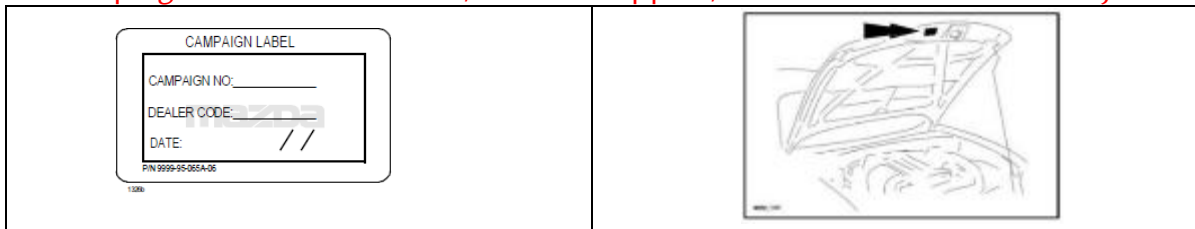
**SUBJECT VEHICLES**

Model	Subject VIN range	Subject production date range
2024 CX-90	JM3KK**** R1 100044 - 189844	From December 27, 2022, through July 1, 2024.
2025 CX-70	JM3KJ**** S1 100013 - 114070	From December 5, 2023, through July 1, 2024.

\*Only the vehicles in this range and with a "Announced" or "Open" status in eMDCS are affected. If the vehicle is in the range above and 7024J is either in OPEN or Announced status in eMDCS, proceed to Step 2. If the vehicle does not have an OPEN or Announced 7024J campaign, return the vehicle to the customer or inventory.

2. Perform an eMDCS Warranty Vehicle Inquiry and inspect the vehicle for a Campaign Label with **7024J** attached to the vehicle's hood, driver door or firewall.

**NOTE:** Always be sure to verify the campaign number as the vehicle may have multiple campaign labels on the hood, radiator support, and firewall or driver door jamb.



**eMDCS - Warranty Vehicle Inquiry Results**

If eMDCS displays:	Campaign Label is:	Action to perform:
If no repair date is displayed on the line with CAMPAIGN 7024J, the campaign has not been completed on this vehicle	Present	Fill out Dealer Recall Help on OneMazda contact or the Mazda Warranty Department at <a href="mailto:warrantydept@mazdausa.com">warrantydept@mazdausa.com</a> to review vehicle history.
	Not present	Proceed to "REPAIR PROCEDURE".
If repair date is displayed for CAMPAIGN 7024J, is "CLOSED"	Present	Return vehicle to inventory or customer.
	Not present	Complete a label and apply to vehicle's hood with repair date and dealer code from eMDCS Warranty Inquiry.

**SAFETY AND EMISSIONS RECALL 7024J  
PHEV VEHICLE REPAIR PROCEDURE**

CAMPAIGN 7024J is not displayed	See Action	The vehicle is not affected by the Recall
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**TECHNICIAN LEVEL REQUIRED: CERTIFIED OR ABOVE (DOES NOT HAVE TO BE HYBRID CERTIFIED).**

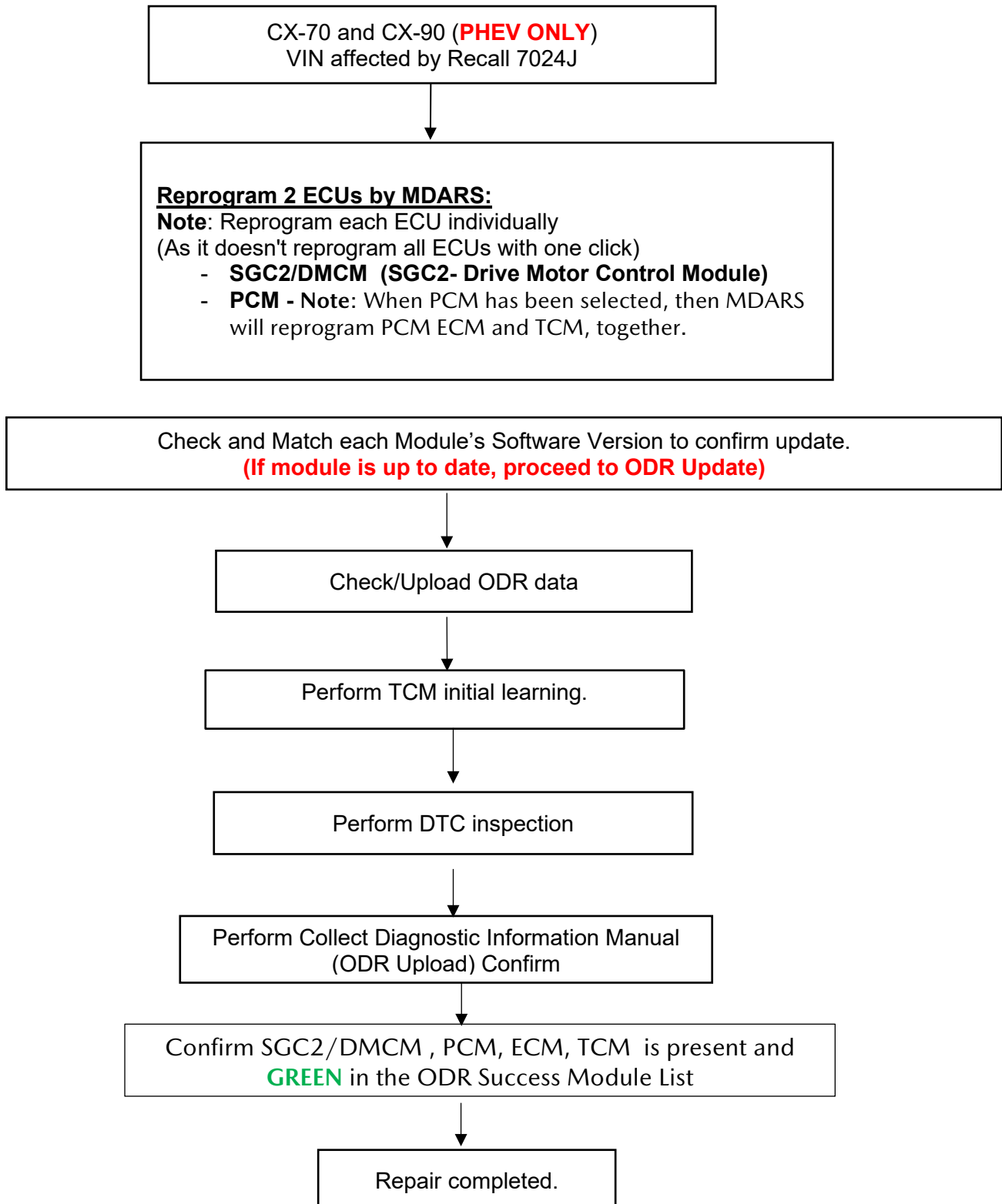
Note: Technician repairing needs to be Certified or above and does not need to be Senior or Master as long as they have had the required training for ODR – Collection of Diagnostic Information

**Section A: Flow Chart – PHEV vehicle ONLY**



**NOTE: This campaign may only resolve DTC's related to modules affected by this campaign for PHEV vehicles. If DTC's unrelated to the campaign exist please clear or repair those concerns before performing the recall 7024J.**

**NOTE: This Flow Chart needs to be followed strictly**





**\*\*NOTE: All vehicles require the upload of ODR (Manual) after the technician has completed all software updates. If ODR is not uploaded successfully, or if one or more software updates are missed, the applicable campaign(s) will remain open, the warranty claim will not accept, and your dealer will have to contact the customer to bring back the car to correct the concern. You must do a ODR Update (Manual) even if the module software is up to date.**

-----END OF SECTION A-----

## Section B : Repair Procedure Recall 7024J

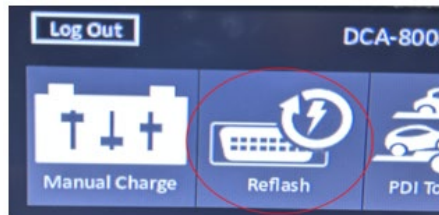
### Reprogram ECUs by MDARS

- **Caution: Please read before repair.**

#### Service caution during reprogramming for ECU(s)

During reprogramming, connect battery charger to the vehicle to stabilize voltage fluctuation. If missing, it may cause damage to ECUs due to decreasing voltage.

7<sup>th</sup> generation vehicle will control to turn on headlight forcibly during reprogramming due to change CAN communication. **Please use the “Reflash” setting in the charger, which will keep the voltage stable. The setting voltage must be between 12 -13V.**



**PHEV VEHICLE NOTE:** Make sure that HV charging cable is not connected to HV battery charging port.

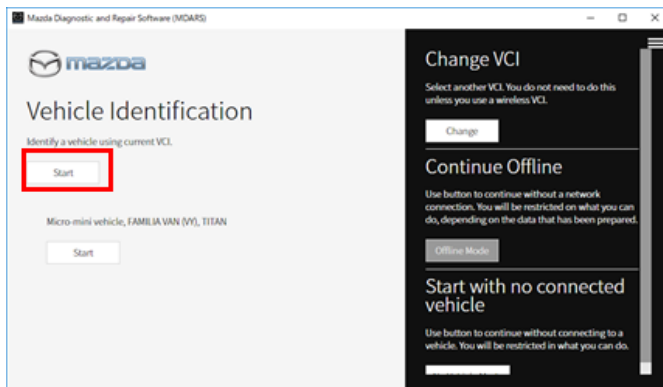
## SGC2/DMCM (SGC2- Drive Motor Control Module) REPROGRAM

### 1. Vehicle Identification

Connect MDARS with the DLC cable and VCM- II to the vehicle, then set the ignition to the ON position.

**CAUTION:** Connect the DLC cable and the VCM- II to the vehicle with the ignition OFF. The CAN bus line might detect some noise and it might cause a diagnostic error when connecting the DLC cable with the ignition ON.

### 2. Click the “Start” button.



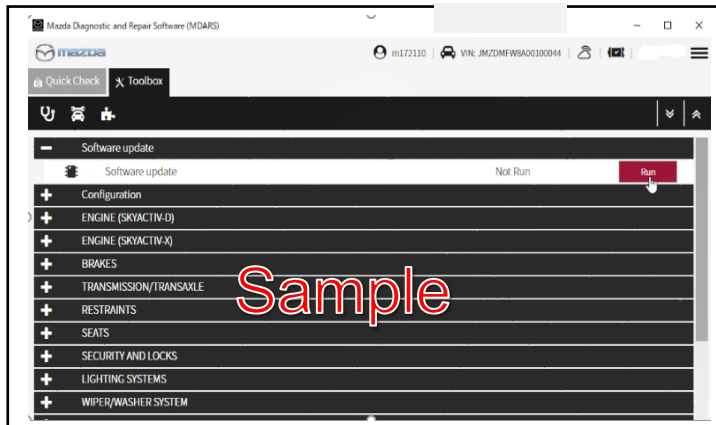
- The Vehicle Identification process will start and automatically inspect every connection and then collect the vehicle information.



- Verify the DTC according to the directions on the quick check screen. **If any DTCs are displayed, perform troubleshooting according to the corresponding DTC inspection.**



- Reprogram ECUs as below.
  - At 'Software update' on 'Toolbox' tab, select 'Run'.



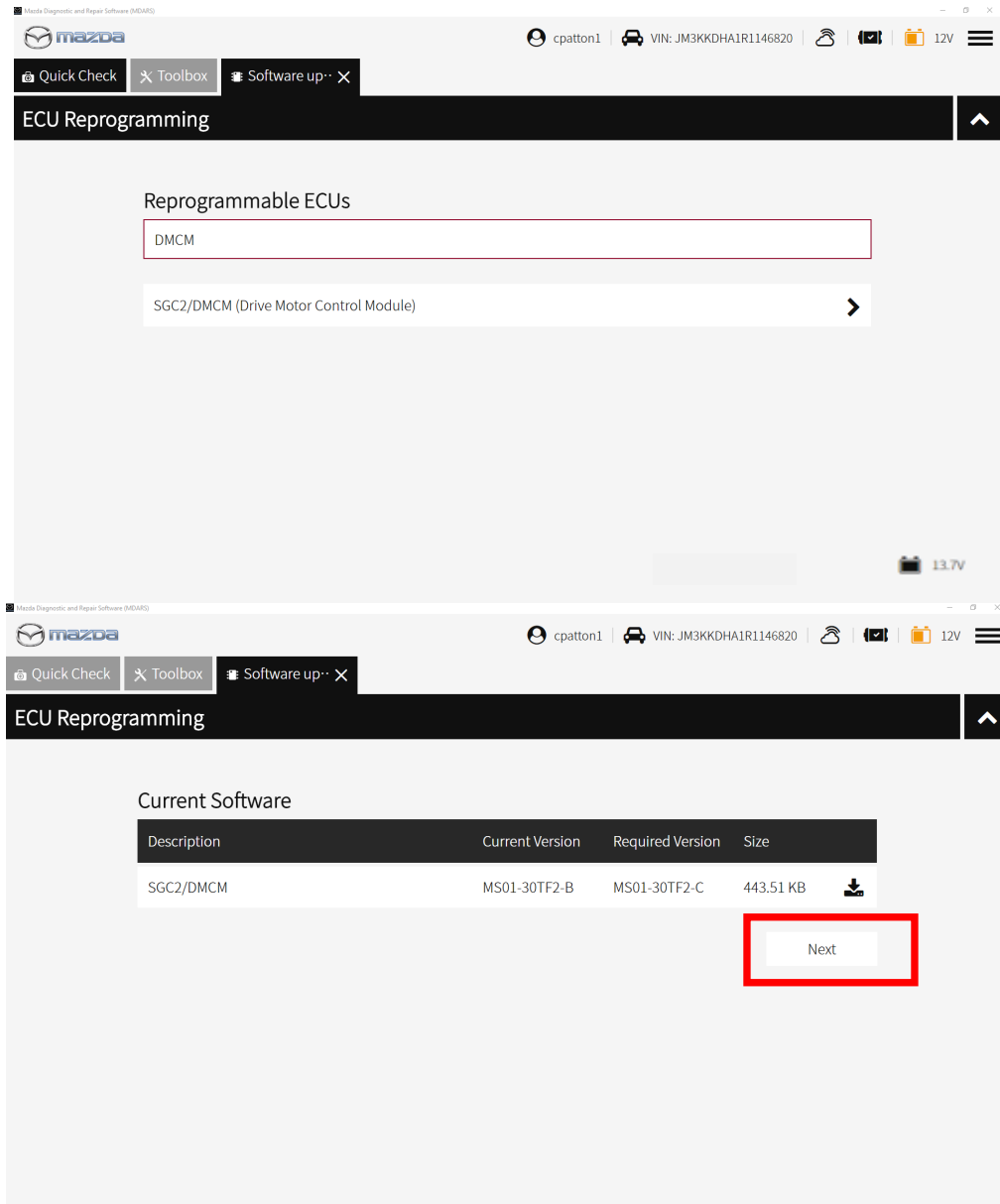
- Select **SGC2/DMCM** on the 'ECU Reprogramming' screen. Start Reprogramming. Once you are finished you will need to update the PCM module.

**IMPORTANT NOTE:**

- Reprogram each ECU individually (as it doesn't reprogram all ECUs with one click).
- When PCM is selected, then MDARS will reprogram PCM, ECM and TCM together as one software package. **Be sure to perform initial TCM learning after TCM reprogramming.**
- If current calibration file name in the ECU FILENAME screen is the same as shown in Calibration Files Information or with a later suffix, reprogramming is not necessary.
- MDARS reads the current file name of the modules to be reprogrammed and then reprograms the required modules only. (MDARS does not reprogram modules that are not needed)

**CAUTION:**

- Please be careful about the behavior of MDARS when reprogramming an ECU. Depending on the reprogramming ECU, IG-ON and IG-OFF may be repeated several times due to MDARS. This operation is normal operation.
- **If module is up to date or current version, proceed to ODS update.**

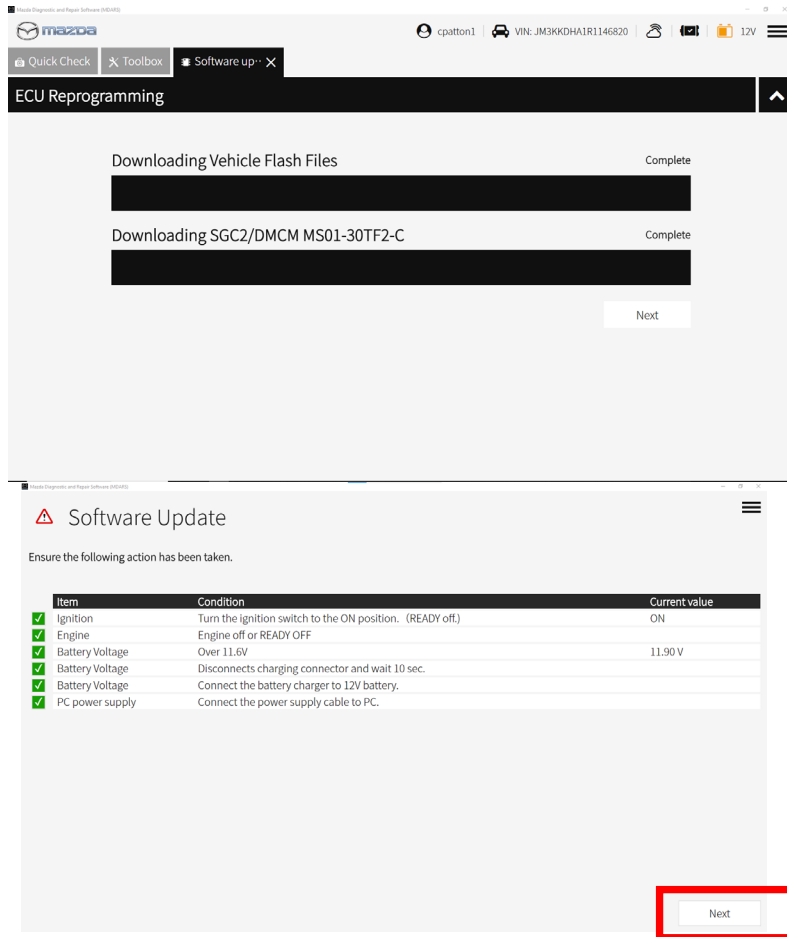


**NOTES:**

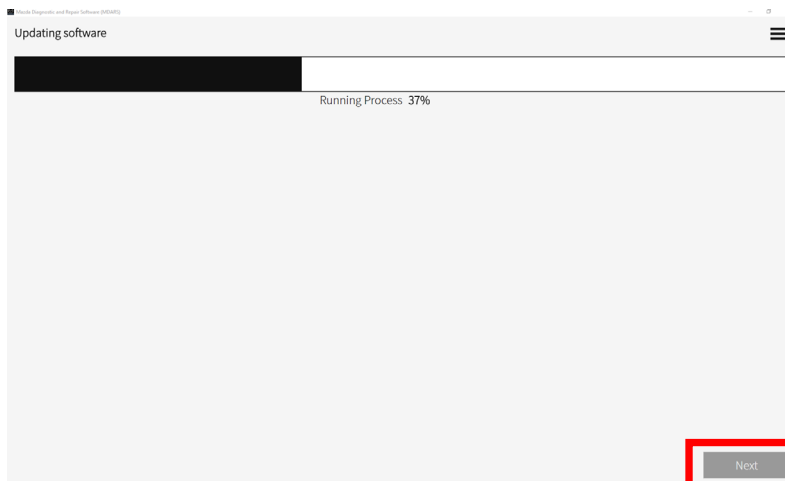
- If SGC2/DMCM current version starts with MS02 the software is already updated. Proceed to PCM programming.
- If SGC2/DMCM current version starts with MR01 you have a MHEV vehicle, and you need to use the MHEV vehicle instructions.
- If SGC2/DMCM current version starts with MS01-B go to next step.

(1) Follow instructions in the screen and click "Next".

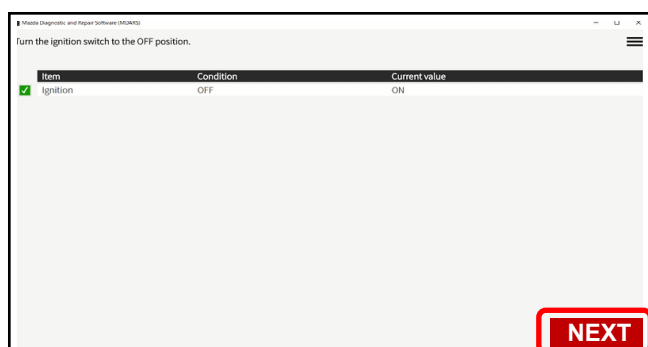
# SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE



- (2) This is the screen while the software is being updated. The progress bar does not change for about 60 seconds.

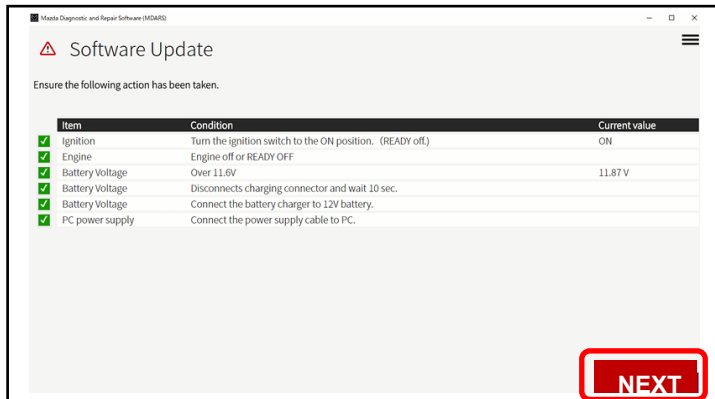


- (3) During reprogramming, "Turn Ignition Switch to the OFF Position" may display on the MDARS several times. Turn the ignition switch OFF, check the box, and select "Next".

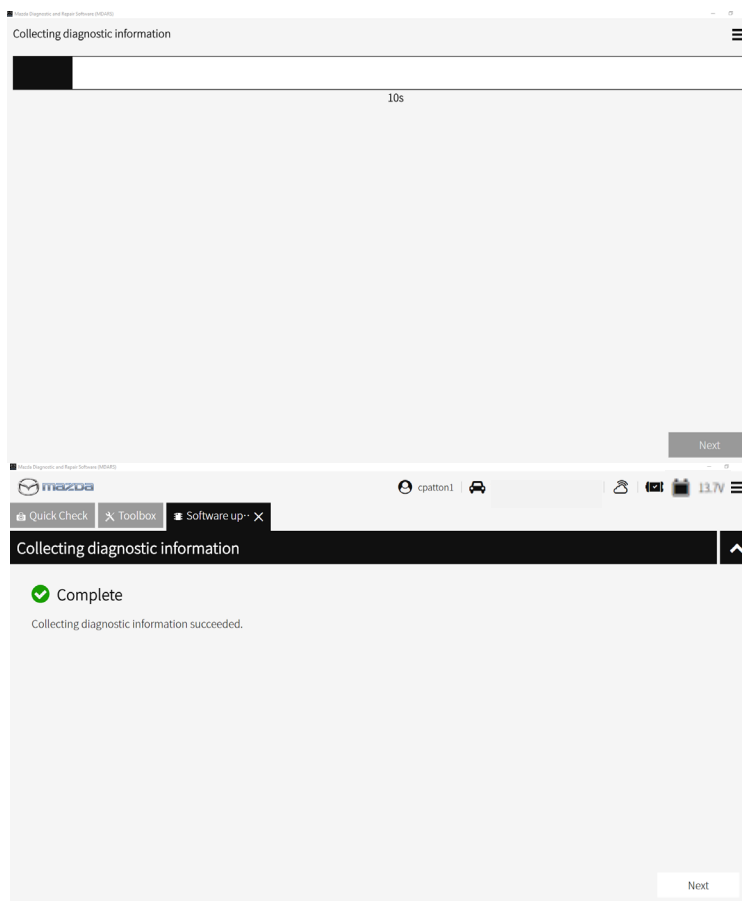
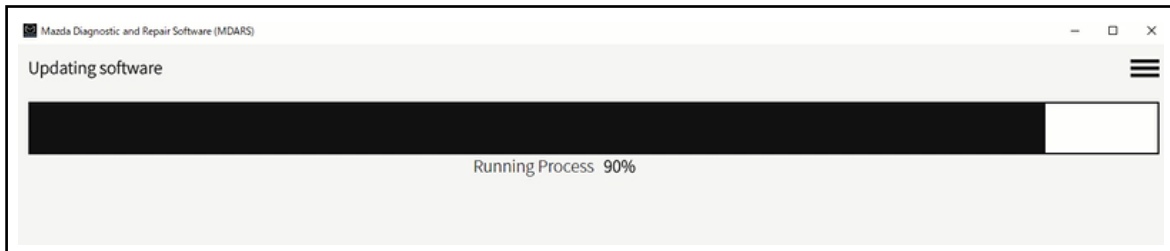


## SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE

- (4) MDARS may return to screen shown in step (1) multiple times (this is normal operation.). Then each time turn the ignition switch to the ON position and then click 'next'.

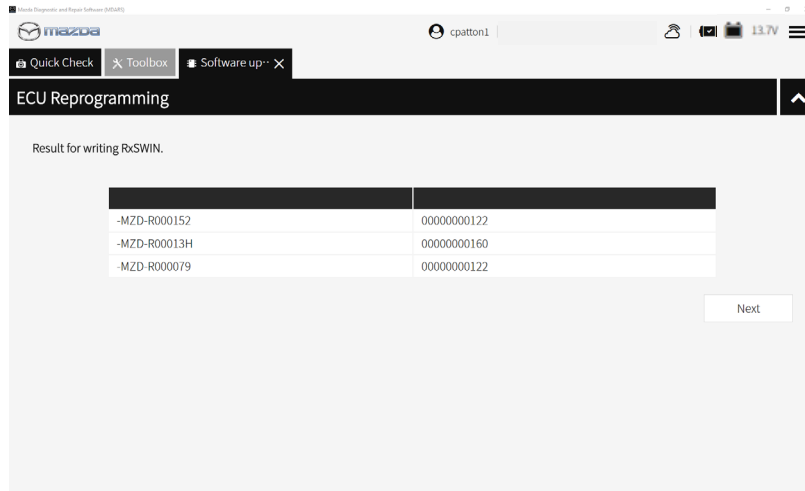


- (5) When the software is being updated and advances to 90% on the screen, it may stop advancing for about 60 seconds. Wait until reprogramming is complete.

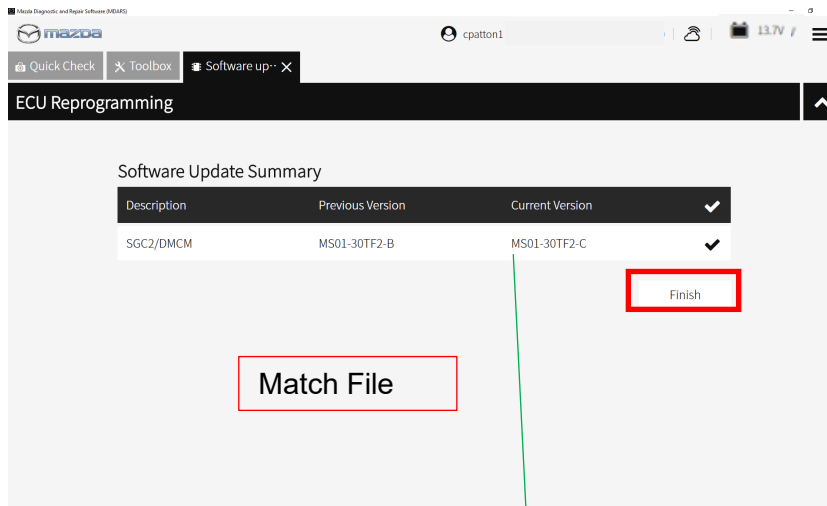


## SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE

7. After completion of software update, the previous and current software version are shown.
  - Check current version at "Calibration File information below".
  - Then, click on "Finish" to exit the ECU reprogramming.
  - **If module is up to date or current version, proceed to ODR Update**



# SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE



**Calibration file information Note (Make sure you have a PHEV Vehicle and NOT a MHEV)**

**Note: If the calibration file has the latest suffix in the table or later, unit is already modified. Proceed to Manual ODR Update. If the vehicle has MS02-30TF2- or later proceed to Manual ODR update.**

Model	Module	Target ECU (Hardware #)	NEW Target Software file #	Reprogramming Time (min.)	Module to be reprogrammed automatically.
CX-70	SGC2/DMCM (PHEV)	MS01-30320-	MS01-30TF2-C or later (use latest version installed)	3	-

Model	Module	Target ECU (Hardware #)	NEW Target Software file #	Reprogramming Time (min.)	Module to be reprogrammed automatically.
CX-90	SGC2/DMCM (PHEV)	MS01-30320-	MS01-30TF2-C or later (use latest version installed)	3	-

## PCM REPROGRAM with TCM RELEARN

**Go back to step 5 and repeat the same steps and select PCM. This will automatically update the ECM and TCM as well. See screenshots below**

# SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE

Mazda Diagnostic and Repair Software (MDARS)

Quick Check | Toolbox | Software up

## ECU Reprogramming

Current Software

Description	Current Version	Required Version	Size	
PCM	MS06-186K2-V	MS06-186K2-W	1.19 MB	

Dependent Software

ECM	PXRC-188K2-T	PXRC-188K2-U	1.05 MB	
TCM	PXPN-21PS1-H	PXPN-21PS1-J	1.27 MB	

Next

Mazda Diagnostic and Repair Software (MDARS)

Quick Check | Toolbox | Software up

## ECU Reprogramming

Downloading Vehicle Flash Files Complete

Downloading TCM PXPN-21PS1-J Complete

Downloading ECM PXRC-188K2-U Complete

Downloading PCM MS06-186K2-W Complete

Next

Mazda Diagnostic and Repair Software (MDARS)

Quick Check | Toolbox | Software up

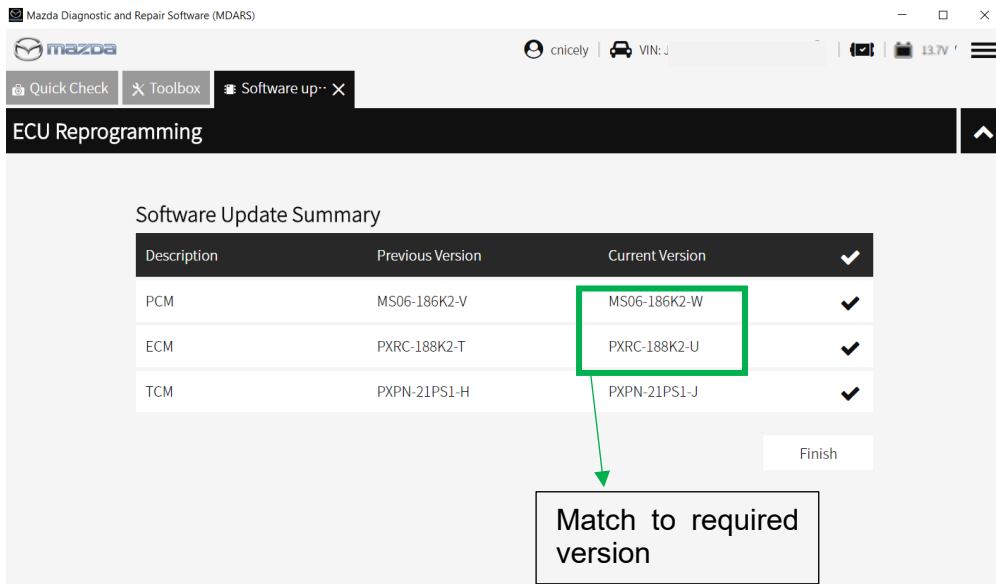
## ECU Reprogramming

Result for writing RxSWIN.

-MZD-R000152	00000000122
-MZD-R00013H	00000000160
-MZD-R000079	00000000122

Next

# SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE



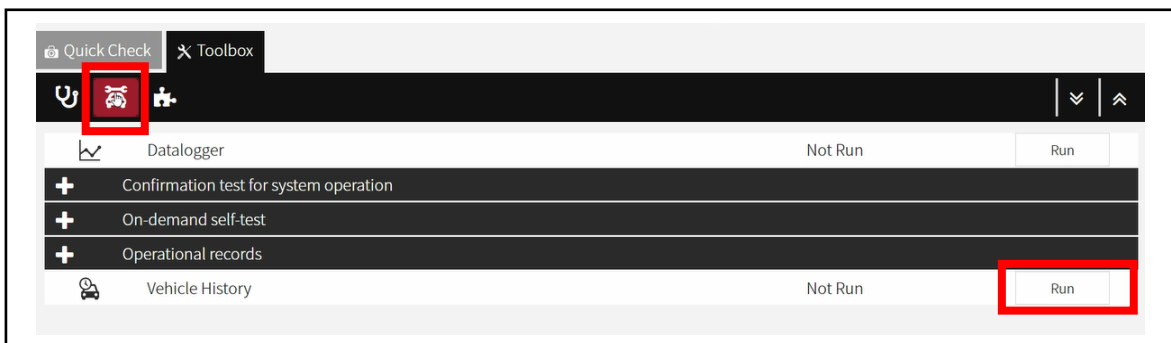
Model	Module	Target ECU (Hardware #)	NEW Target Software file #	Reprogramming Time (min.)	Module to be reprogrammed automatically.
CX-70	PCM (PHEV)	MS01-186B1-	MS18-186K2-G	10	ECM and TCM
			MS19-186K2-G		
	ECM (PHEV)	PXGH-18881	PW64-188K2-F	10	PCM and TCM

Model	Module	Target ECU (Hardware #)	NEW Target Software file #	Reprogramming Time (min.)	Module to be reprogrammed automatically.
CX-90	PCM (PHEV)	MS01-186B1-	MS05-186K2-W	10	ECM and TCM
			MS06-186K2-W		
	ECM (PHEV)	PXGH-18881	PXRC-188K2-U	10	PCM and TCM

## Check/Upload ODR Data

Check ODR collection result after reprogramming all required modules with vehicle verification.

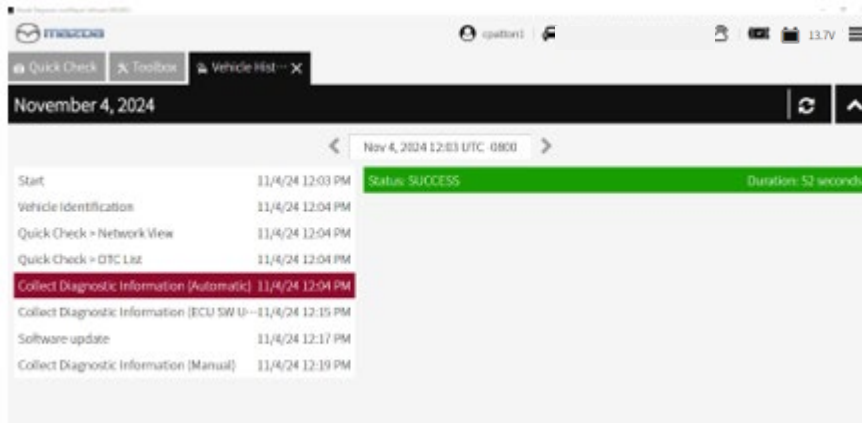
8. Open the vehicle history on toolbox tab.



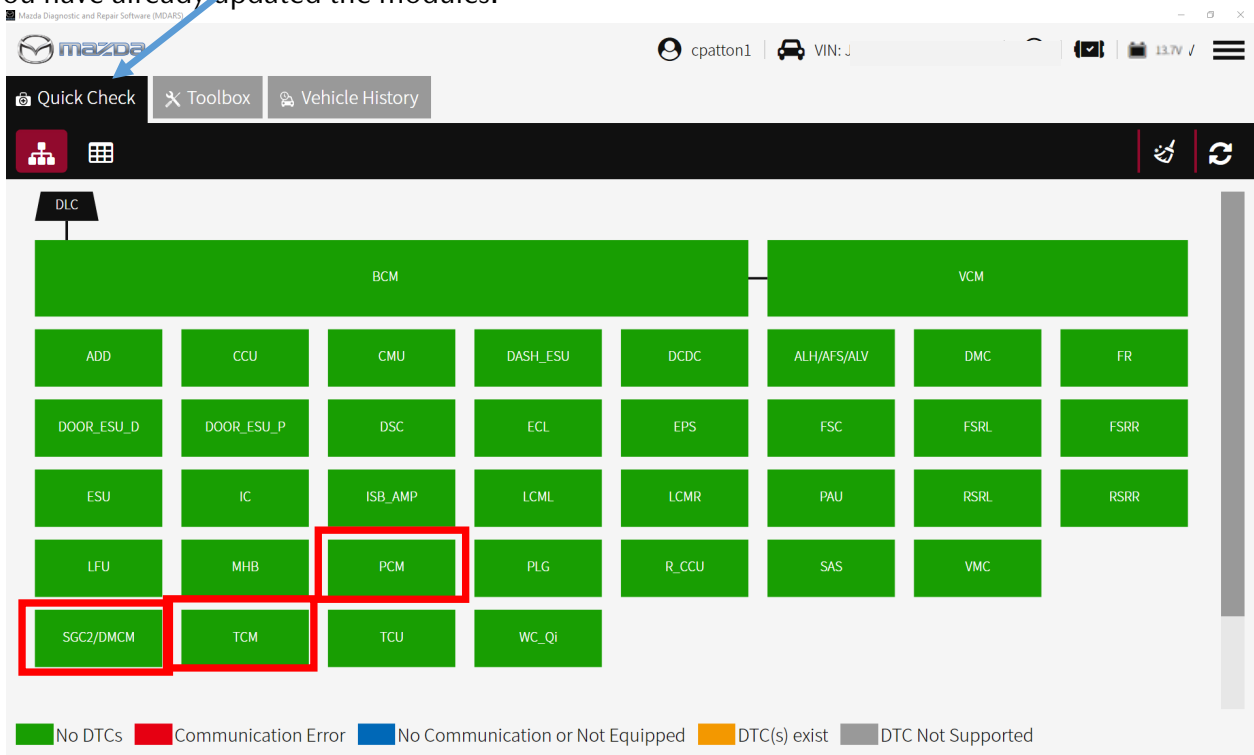
## SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE

9. Click the 'Collect Diagnostic Information' and the status has "SUCCESS" on green.  
**Note:** Verify the "Collect Diagnostic Information" after all required modules are updated.  
 Not necessary to confirm the 'Collect Diagnostic Information' after required modules reprogram every time.

**Note:** Only the latest "Collect Diagnostic Information" is the valid one and that needs to show "SUCCESS"



Confirm with Quick Check the following Modules SGC2/DMCM , PCM, TCM are highlighted in Green after you have already updated the modules.

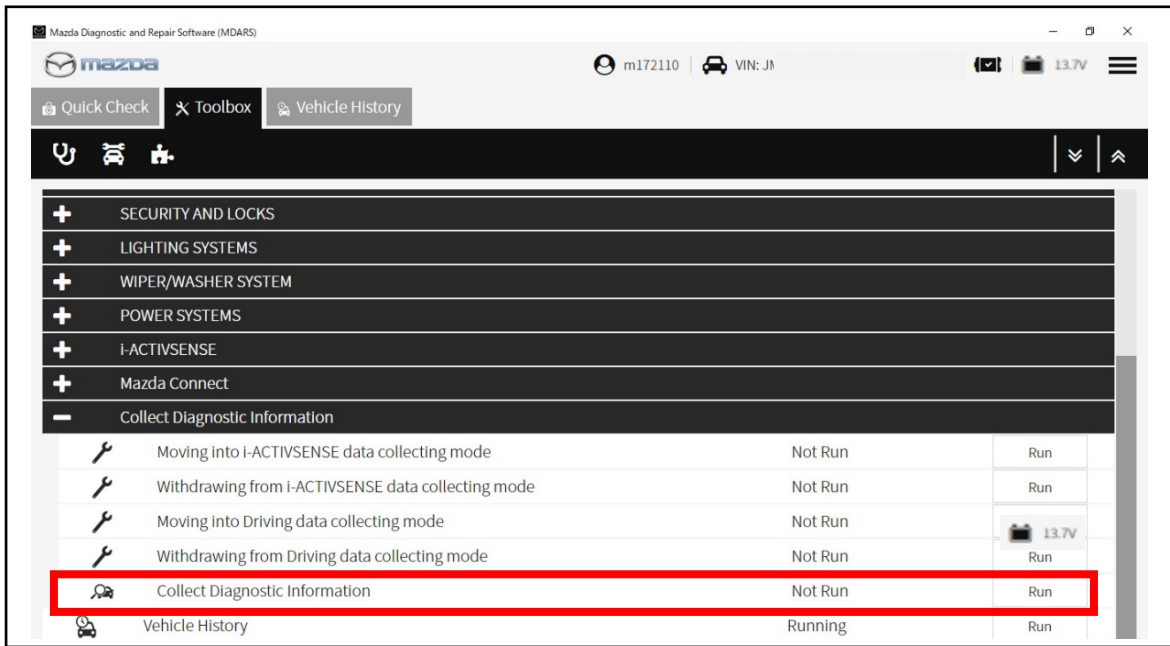


✘If the status is 'FAILURE', the ODR (latest vehicle information ) has not been submitted to the server.

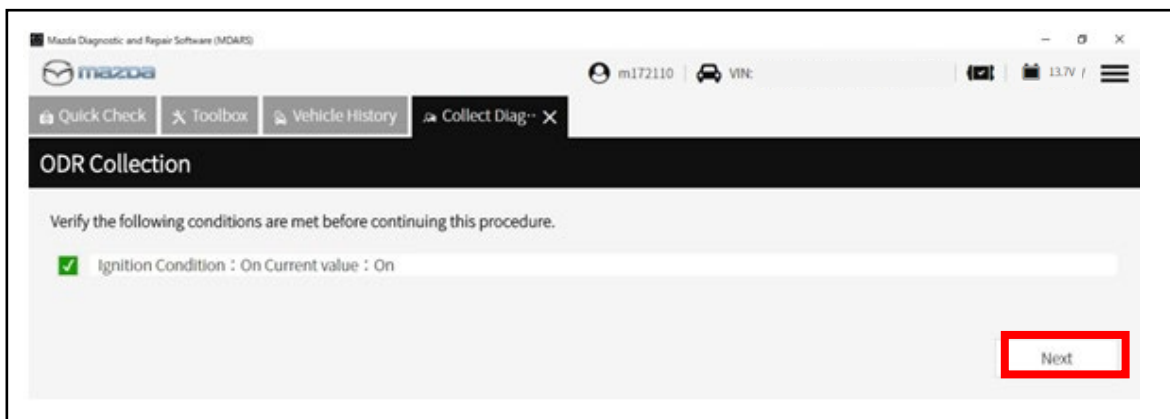
# SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE

10. Perform following steps when status, as shown above, shows "FAILURE".

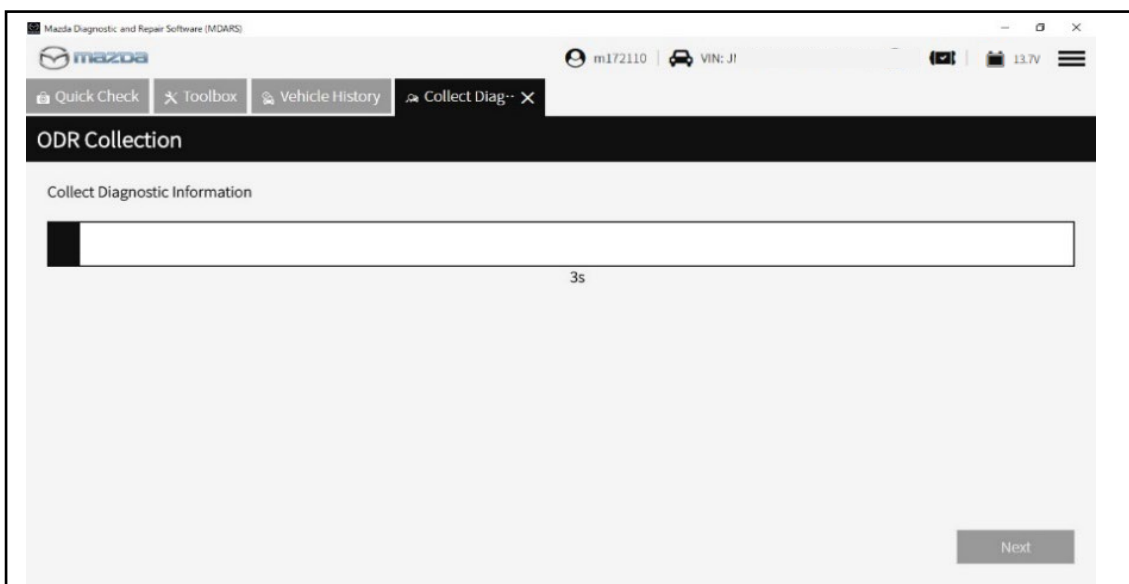
(1) At the toolbox tab, select "Collect Diagnostic information" then click 'Run'.



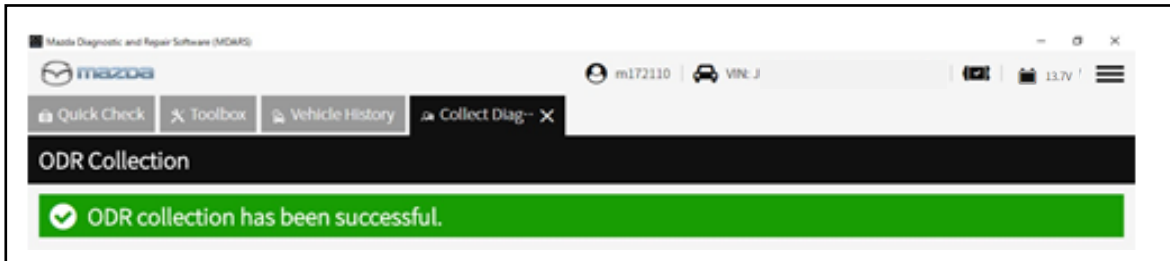
(2) Click 'Next'.



(3) It takes around 60 seconds.



(4) MDARS will collect ODR and send to the server.



Disconnect battery charger before going to next step.

## TCM Initial Learning after TCM reprogramming

### CAUTION:

- If the VIN is affected by campaigns other than this Recall 7024J which also requires 'TCM Initial Learning after TCM reprogramming', please only perform it once when all concerned ECU software reprogramming has been completed.

### Warning

- When performing the initial learning, apply the parking brake securely and block the front and rear wheels using wheel blocks so that the vehicle does not move. Otherwise, the vehicle may move which could lead to an accident because the gears are forcibly changed with the engine running and the shift lever in the drive position while in the initial learning.


### Note:

- While the initial learning is being performed, the following phenomena may occur.
  - Shift shock occurs intermittently.
  - Indications such as selector lever positions differ from those displayed normally.

### Preparation prior to beginning

- a) Switch the ignition ON (engine on)/main power ON (READY on).
- b) Apply the parking brake.
- c) Shift the selector lever to P range and set the wheel blocks for both the front and rear wheels.
- d) The ATF temperature is 45°C to 105°C as an execution condition for AT initial learning, but after learning starts, the ATF temperature may drop to 44°C and learning may be interrupted, so learning should be started after raising the temperature to 50°C or higher.

### Initial learning procedure

- e) Connect the M-MDS to the DLC-2 (if it was disconnected for any reason).
- f) Open the engine hood. (To ensure that the engine starts. If engine hood is opened, EV mode does not work)
- g) Switch the ignition ON (engine off)/main power ON (READY on).
- h) Perform the following procedure using the M-MDS.
  - (1) Press [Start] for the vehicle identification.
  - (2) Press the [Toolbox] tab.
  - (3) Press the [Work Support] icon. 
  - (4) Press [TRANSMISSION/TRANSAXLE].
  - (5) Press [Run] for Initial learning of AT.
- i) Perform the automatic transmission initial learning.

## SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE

- j) Using the M-MDS, verify that TCM DTC P06B8:00 has not been stored. (See DTC INSPECTION.)
- If DTC P06B8:00 is displayed, switch the ignition off/main power OFF and repeat the procedure from Step 18.
  - If any other DTCs are displayed, repair or replace the malfunctioning location according to the applicable DTC troubleshooting of workshop manual.

- k) Additionally, perform the following.

### **Shift range learning.**

1. Start the engine.
2. Switch to 'Sport Mode'



3. While idling, depress the brake and perform the following steps.
  - i) Move the shift lever in "D".
  - ii) Move the shift lever from "D" to "R" and wait 5 seconds \*
  - iii) Move the shift lever from "R" to "D" and wait 5 seconds \*

\* Do not stop in N range while moving the shift lever.

  - iv) Repeat steps from i) to iii) 5 times.

### **Note:**

- In addition to the above learning, TCM also performs learning while driving automatically.
- Immediately after reprogramming and initial learning, the above driving learning will be reset. Therefore, it is important to explain the following to customers.

### **Explanation to customers**

- To improve shift feel, the vehicle learns the timing of engaging the clutch while driving.
- This reprogramming will improve the shift feel and optimize by learning.
- However, the learning values will be reset to the initial one.
- Once the learning values are initialized, a slight shift shock might be felt intermittently, however with learning by driving it will be improved, but it may take a few days.

## **DTC inspection**

1. Check and erase DTC by using MDARS.
2. Confirm all DTCs were erased.

### **Note:**

- If any DTCs should remain after performing DTC erase, diagnose the DTCs according to the appropriate troubleshooting section of the Workshop Manual.

### **Note:**

## SAFETY AND EMISSIONS RECALL 7024J PHEV VEHICLE REPAIR PROCEDURE

- After the reprogramming, pending DTC P2610:00 [PCM] may be stored without MIL illumination. Since this DTC may turn to a current DTC depending on operations after the reprogramming, clear this DTC after all repair work is done.
  - Perform the following engine start and stop procedure to clear DTC P2610:00:
    - 1) Start the engine (5 seconds).
    - 2) Stop the engine.
    - 3) Clear the DTC recorded in the memory by MDARS.
    - 4) Perform the KOER self-test by MDARS.
- 3. Disconnect the MDARS from the DLC-2.

### Explanation to customers

- Any ECU reprogramming resets the BCM's average fuel economy (remaining miles).
  - Therefore, the remaining miles may change when customer drives after reprogramming.
- After learning the customer's average fuel consumption calculated over several drives, the remaining miles will be displayed correctly.

## [Go to ODR \(Manual\) Update](#)

[Recovery Mode Procedure – Click here if programming fails.](#) Then return here and move to the next step in the procedure after recovery.

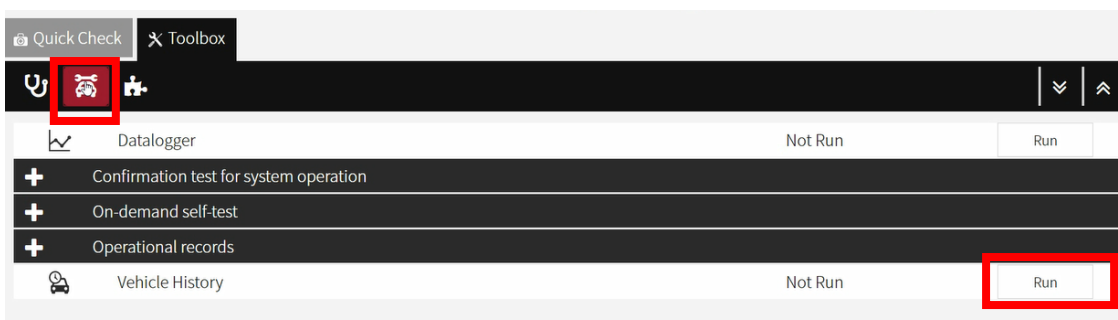
**NOTE:** If the calibration file up-to-date (suffix is equal to or greater than shown in the table), the module is already modified but ODR (Manual) update is still required.

## ODR (Manual) Update

**WARNING! FAILURE TO PERFORM AN ODR (MANUAL) UPDATE MAY RESULT IN CLAIM DENIAL, CAMPAIGN REMAINING IN OPEN STATUS AND VEHICLE HAVING TO COME BACK TO REDO THE ODR DATA PUSH.**

**Upload ODR Data** - Check for ODR collection result after reprogramming all required modules with vehicle verification. Then proceed to perform an ODR (Manual) Update

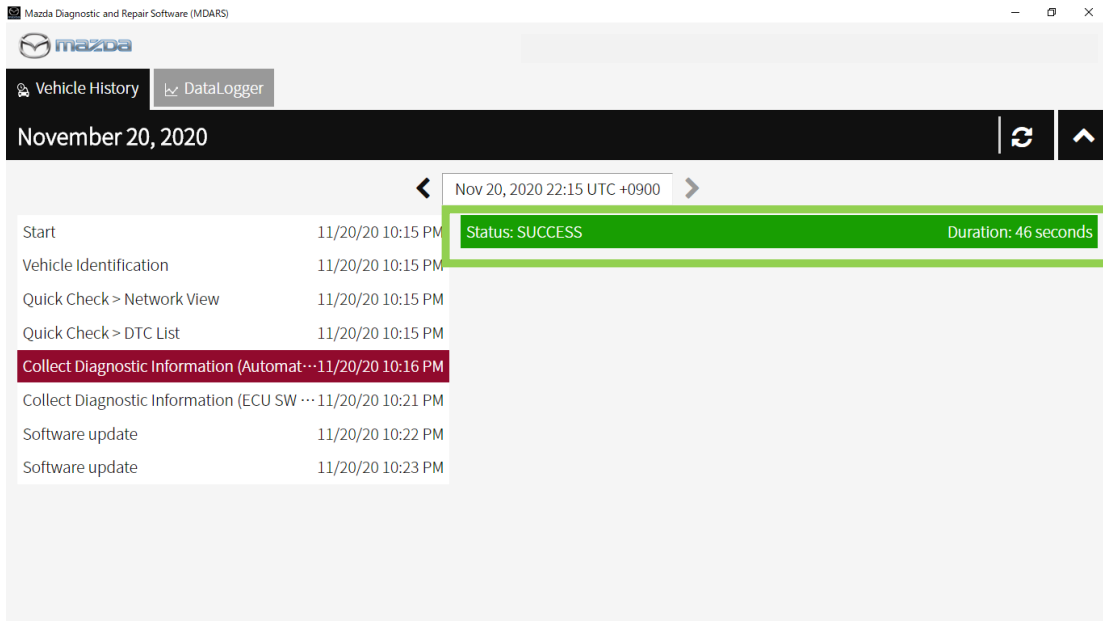
- A. Open the vehicle history on toolbox tab.



- B. Click the 'Collect Diagnostic Information' and make sure the status is 'SUCCESS' in green. **NOTE:** Verify by selecting 'Collect Diagnostic Information' after all required modules are updated. It is not necessary to confirm the 'Collect Diagnostic Information'

after required module reprogram every time.

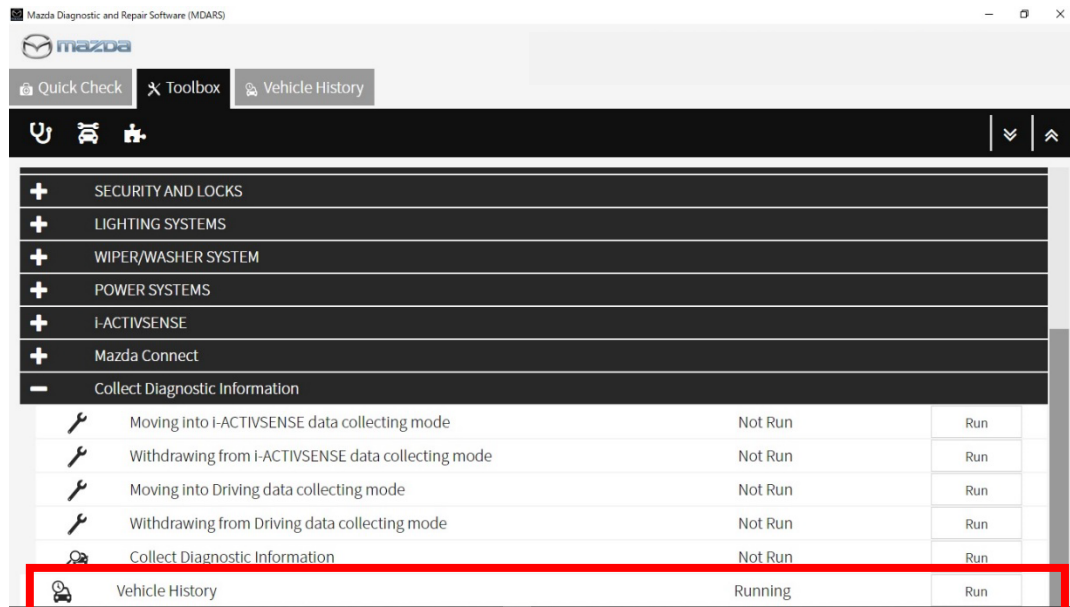
Only the latest "Collect Diagnostic Information" is the considered valid and that needs to show "SUCCESS"



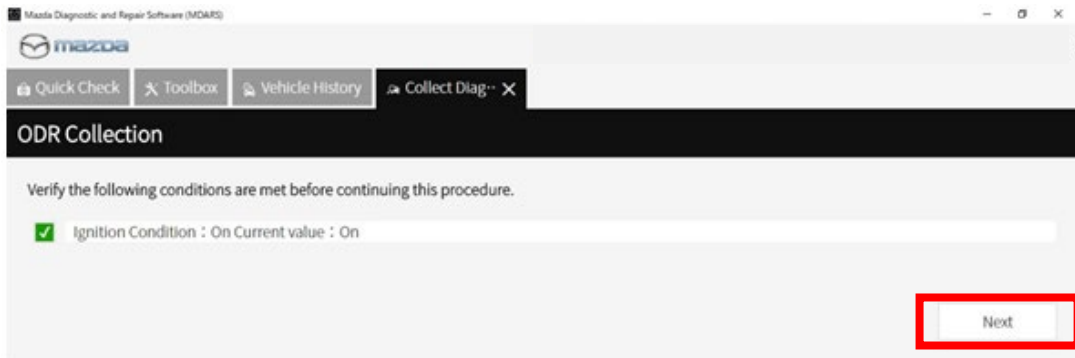
**CAUTION:** If the status is 'FAILURE', the ODR (latest vehicle information) has not been submitted to the server, continue with steps below.



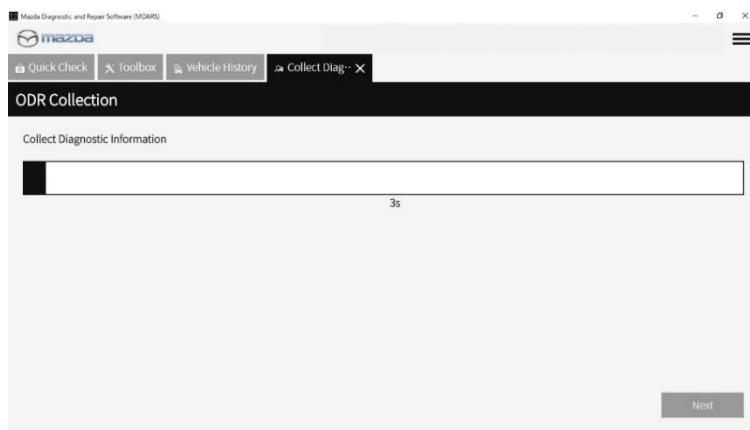
C. 'Collect Diagnostic information' then click 'Run' at the tool box tab.



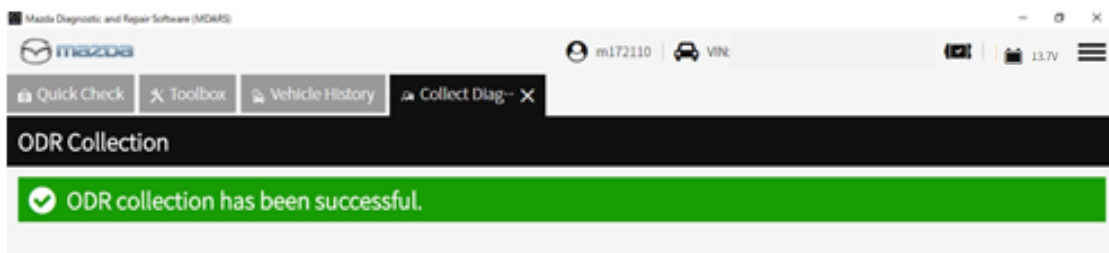
D. Click 'Next'



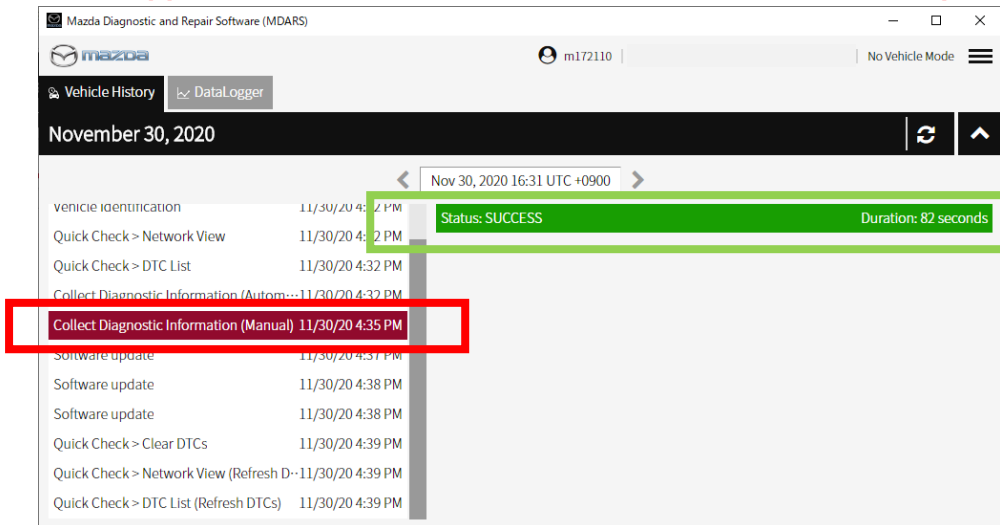
E. This may take around 60 seconds.



F. MDARS has collected ODR data and confirmation has been sent to the server.



- G. Check to make sure “Collect Diagnostic Information (Manual)” appears and Status shows ‘SUCCESS’ in green. ***If this step is not completed, your warranty claim will not be approved and the customer will need to return for a re-repair.***



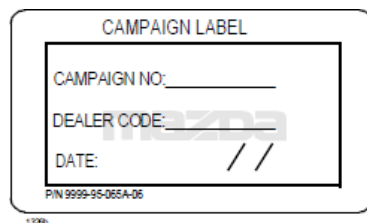
Disconnect the MDARS from the DLC-2.

-----END OF SECTION B-----

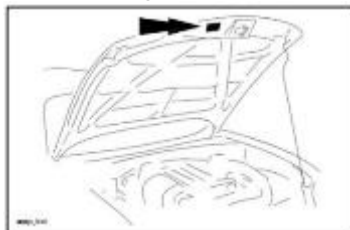
## GO TO SECTION C. CAMPAIGN LABEL INSTALLATION

### C. Campaign Label Installation

1. Fill out a Black “Campaign Label” (9999-95-055A-06) with Campaign #: “7024J”, your dealer code, and the repair date. **It is OK to bundle multiple campaigns on one label as long as each campaign is legible as Mazda vehicles may have more than 1 campaign.** Use more than one label if necessary.



2. Affix it to the hood as shown. If you cannot place the label here, the radiator support, firewall or driver door jamb are acceptable locations:



**END OF REPAIR PROCEDURE**