



Technical Service BULLETIN

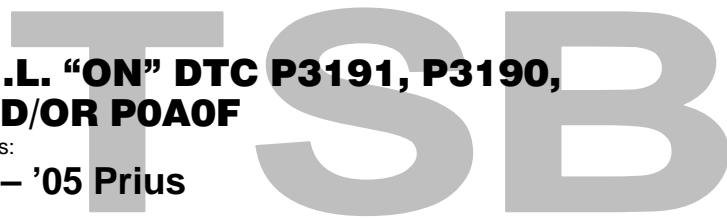
October 18, 2004

Title:

M.I.L. "ON" DTC P3191, P3190, AND/OR P0A0F

Models:

'04 – '05 Prius



REVISED

ENGINE
EG047-04

TSB REVISION NOTICE:

- August 11, 2007: The Diagnostic Procedure has been added before the Repair Procedures.
- February 22, 2005: Applicable Vehicles has been updated to include 2005 model year.
- November 19, 2004: The Caution in Repair Procedure B Step 1 was updated. The previous TSB should be discarded.

TSB UPDATE NOTICE:

The information contained in this TSB supercedes TSB No. EG027-04. TSB No. EG027-04 is now obsolete and should be discarded.

Introduction

Some customers may report a M.I.L. and Master Warning Light "ON" condition that may occur after slowing down and stopping, and when attempting to restart. The vehicle may experience abnormally low power output condition or inability to "Ready On." The following Diagnostic Trouble Codes may be found: P3191 "Engine Does Not Start," P3190 "Poor Engine Power," and/or P0A0F "Engine Failed To Start." Reprogram the Engine and HV Hybrid ECU to improve this condition.

NOTE:

Updating the HV ECU as part of Special Service Campaign (SSC) 40D is required to fully correct the P3191, P3190 and/or P0A0F condition. Verify that SSC 40D has been performed prior to reprogramming of the Engine Control Module (ECM) (SAE term: Powertrain Control Module/PCM).

Applicable Vehicles

- All 2004 model year **Prius** vehicles.
- 2005 model year **Prius** vehicles produced **BEFORE** the Production Change Effective VINs shown in this TSB.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
EG4017	Reprogram Prius Engine ECU	0.8	89661-47###	8A	99

Applicable Warranty*:

This repair is covered under the Toyota Specified Major Emission Control Component Warranty. This warranty is in effect for 96 months or 80,000 miles, whichever occurs first, from the vehicle's in-service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.



Production Change Information

MODEL	PLANT	PRODUCTION CHANGE EFFECTIVE VIN
Prius	Plant 1	JTDKB2#U#50133248
		JTDKB2#U#53013255
	Plant 2	JTDKB2#U#57003414






Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
N/A	00451-00001-LBL	Authorized Modification Label	1
89661-47070 89661-47071 89661-47100	89661-47101*	Computer, Engine Control	N/A

* The Engine ECU should **NOT** be replaced as a part of this repair procedure.

NOTE:
 Authorized Modification Labels may be ordered in packages of 25 from the Materials Distribution Center (MDC) through the Dealer Daily Dealer Support Materials System, or by calling the MDC at 1-800-622-2033.

Required SSTs

SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QUANTITY
Toyota Diagnostic Tester Kit* 	01001271	1
CAN Interface Module Kit* 	01002744	1
12 Megabyte Diagnostic Tester Program Card with version 12.01a (R040, 11/19/04) Software (or later)* 	01002593-005	1
Prius Automatic Charger** 	00002-YA122-01	1
Midtronics Battery Tester* 	00002-MP815-T	1

* Essential SSTs.

** Essential SST. Supersedes 00002-YA121-01. P/N 00002-YA121-01 may still be used (with switch in 10 AMP position).

NOTE:
 Additional Diagnostic Tester Kits, CAN Interface Modules, Program Cards or other SSTs may be ordered by calling SPX/OTC at 1-800-933-8335.

**Calibration ID
Information**

CURRENT CALIBRATION ID	NEW CALIBRATION ID
34702000	34705100
34702100	
34702200	
34705000	

**Diagnostic
Procedure**

Since many factors can prevent the engine from starting, eliminate other possible causes prior to performing the detailed repair procedure that follows the general trouble areas.

HINT:

If the engine appears to operate for 5 – 10 seconds and then turns OFF, it is probably NOT running. One possible cause is debris lodged in the Mass Air Flow (MAF) meter. To diagnose this condition, you MUST REMOVE the MAF and inspect the sensing wire cavity.

General trouble areas:

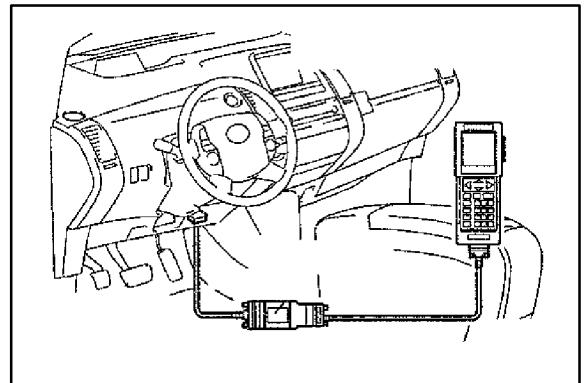
1. Fuel injection system
2. Ignition system
3. Engine compression
4. Air induction system
5. Fuel quality and level (refer to the Owner's Manual for recommendations)
6. Correct engine oil viscosity and level (refer to the Owner's Manual for recommendations). If overfilled, check intake manifold for contamination.

**Repair
Procedure A****CAUTION:**

USING ANY PREVIOUS VERSIONS OF VERSION 12.01a SOFTWARE FOR REPROGRAMMING MAY RESULT IN IRREPARABLE DAMAGE TO THE ENGINE ECU (you MUST use R040, dated 11/19/04 release, or newer)! Please refer to the verification procedure in step 6 below.

Confirming the Current Engine ECU Calibration

1. Confirm that the vehicle has undergone Pre-Delivery Service (PDS).
2. Connect the Midtronics Tester and check the condition of the 12 volt auxiliary battery. Charge if necessary before proceeding.



**Repair
Procedure A**
(Continued)

3. Attach the 12 volt Prius Automatic Charger (P/N 00002–YA122–01).

NOTE:

If Prius Automatic Battery Charger P/N 00002–YA122 is used, ensure that the charger is set to the "HIGH" current setting.

4. Connect the Diagnostic Tester with the CAN Interface Module to the DLC3 connector.
5. Turn on the Diagnostic Tester.
6. Press the "YES" button on the Diagnostic Tester.

The number "040," or greater, should appear in the upper right-hand corner.

CAUTION:

Confirm that the correct version of the software (12.01a) and calibration update is loaded into the Diagnostic Tester, otherwise, **IRREPARABLE DAMAGE WILL OCCUR TO THE ENGINE ECU.**

The date shown under "Version 12.01a" **MUST** be "11/19/04" or more recent.

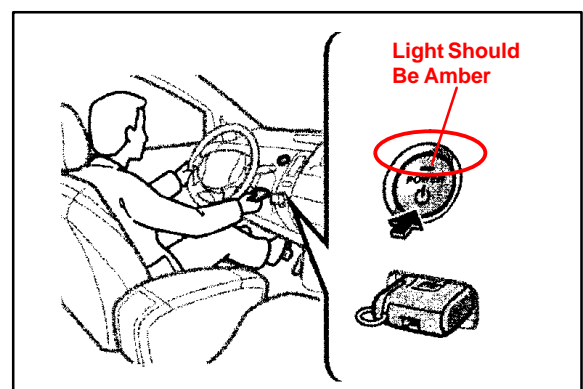
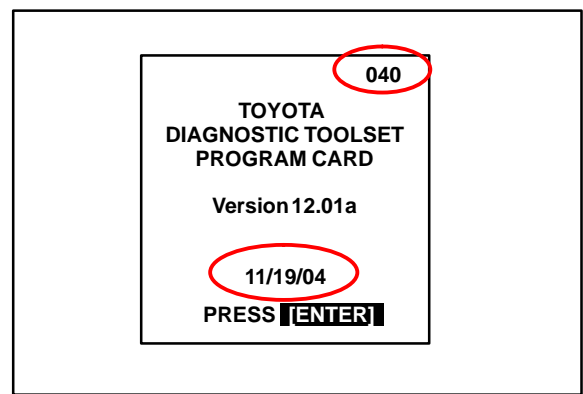
IF NOT: STOP!!!

Update Diagnostic Tester with the newest version of software – 12.01a. The date shown must be "11/19/04" or newer.

7. Insert key into key slot.
8. Push the "POWER" switch twice without depressing the brake pedal and confirm that the hybrid system is "IG-ON."

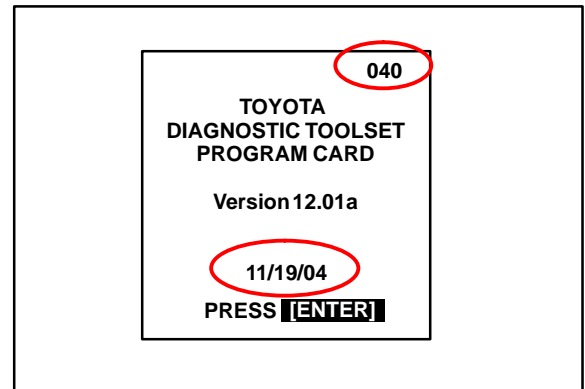
NOTE:

- Do not the start the hybrid system. If the "READY" light is on, turn off and repeat step 7.
- Confirm that the "POWER" switch indicator is amber in color.

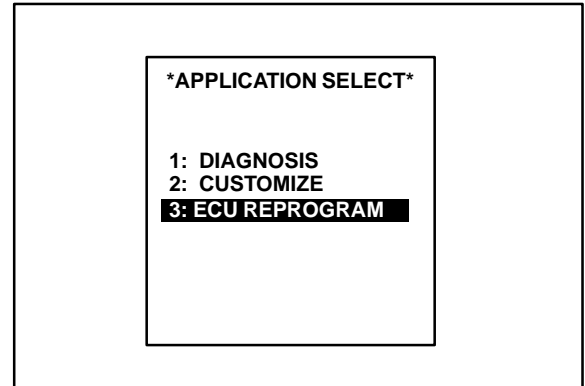


**Repair
Procedure A**
(Continued)

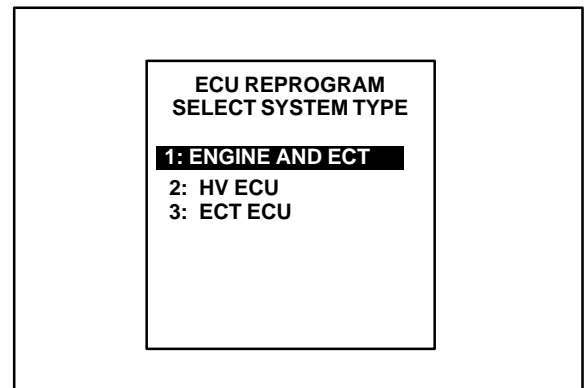
9. Press the "ENTER" key on the Diagnostic Tester (after the screen is displayed and the newest version of software, **12.01a**, is confirmed, as shown in step 6).



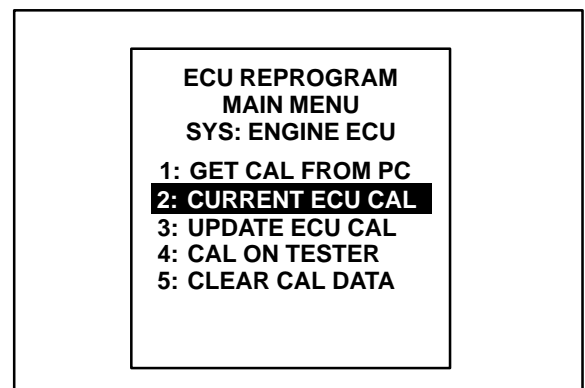
10. Select "3: ECU REPROGRAM" from the "APPLICATION SELECT" menu.



11. Select "1. ENGINE AND ECT" from the "ECU REPROGRAM SELECT SYSTEM TYPE" menu.

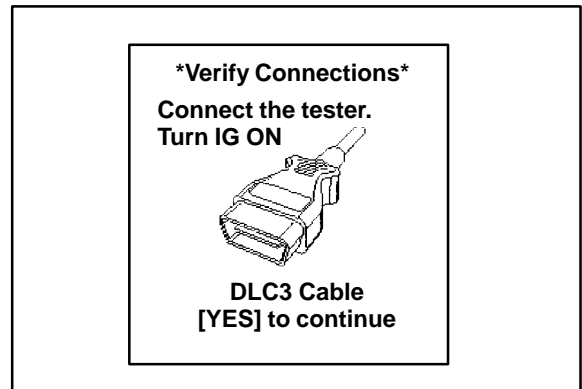


12. Select "2. CURRENT ECU CAL" from the "ECU REPROGRAM MAIN MENU."

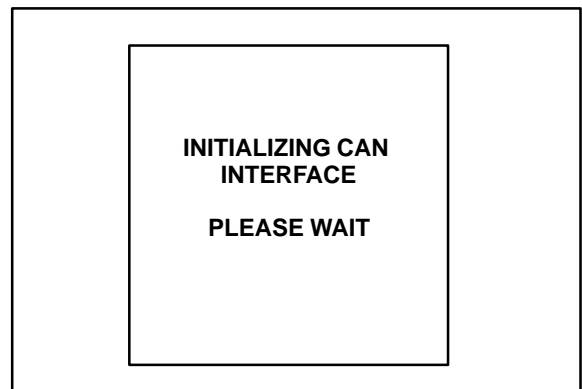


**Repair
Procedure A**
(Continued)

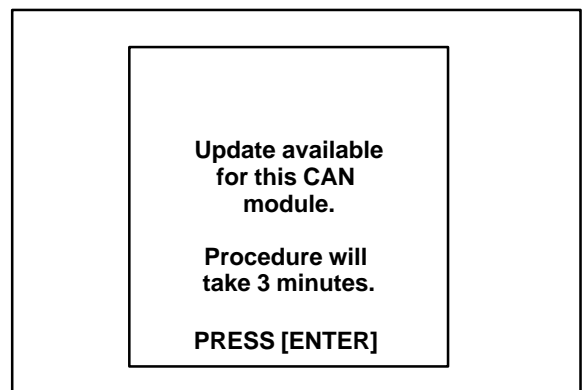
13. Press the "YES" key.



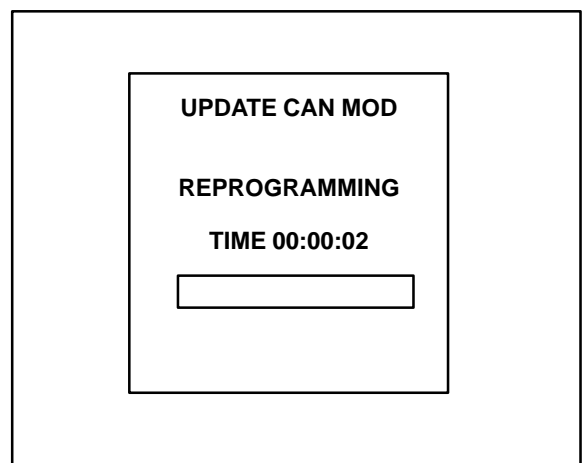
14. The Diagnostic Tester is currently confirming that the CAN Interface Module has been updated. If not, the next three screens will be displayed. If the CAN Interface Module has been updated, proceed to Step 18.



15. Press the "ENTER" key.



16. The CAN Interface Module update takes approximately 3 minutes.



Repair Procedure A
(Continued)

17. Press the "EXIT" key.

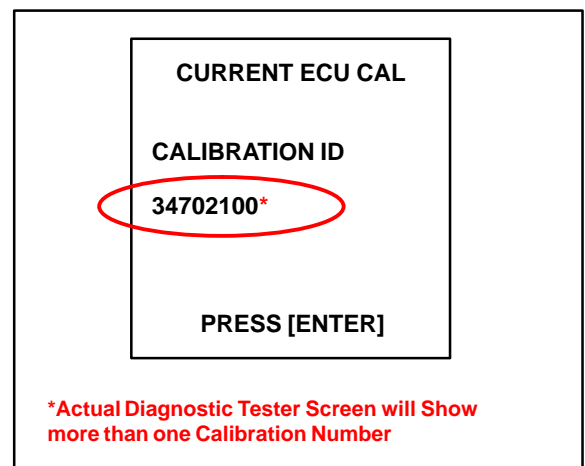


18. Confirm that the Diagnostic Tester displays one of the following calibration IDs:

- 34702200, 34702100, 34702000, or 34705000.

NOTE:

If the display shows a calibration ID of 34705100 or later, then the ENGINE ECU has already been reprogrammed. Press the "EXIT" key and turn off the Diagnostic Tester. Proceed to Recalibration Label Installation (after Repair Procedure B in this TSB).



19. Press the "ENTER" key to return the main menu.

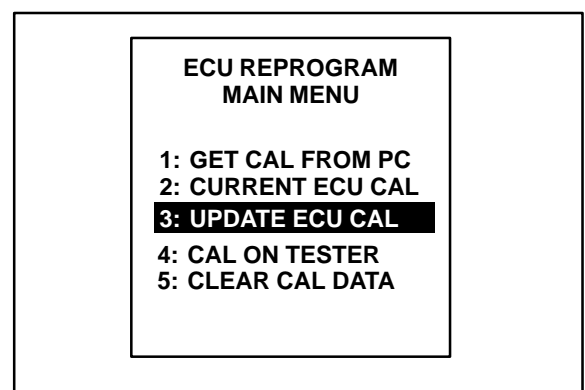
Repair Procedure B

Reprogramming the Engine ECU

1. Confirm that the auxiliary battery is fully charged using the Midtronics Battery Tester before proceeding. The Prius Automatic Charger **MUST** be connected during reprogramming.

CAUTION:

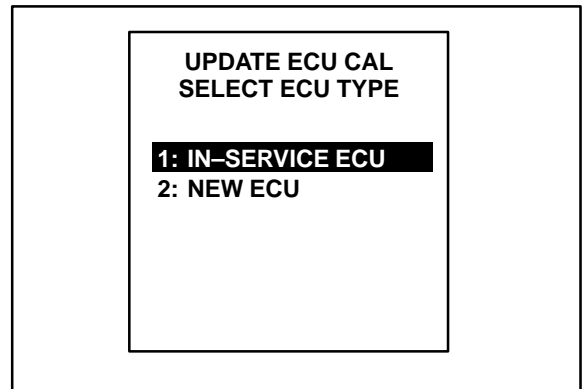
Do not use a jumper battery in place of the Prius Automatic Charger or IRREPARABLE DAMAGE TO THE ENGINE ECU MAY RESULT.



2. Select "3. UPDATE ECU CAL" from the "ECU REPROGRAM MAIN MENU."

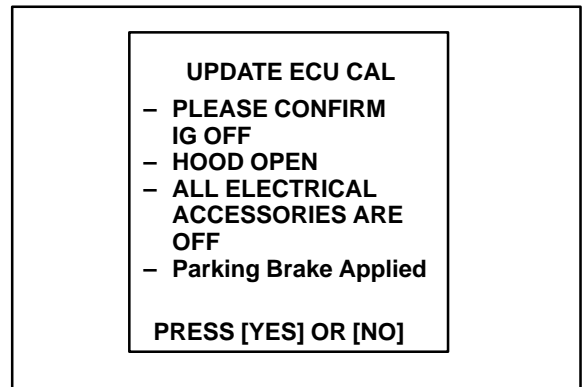
Repair Procedure B
(Continued)

3. Select "1: IN-SERVICE ECU" from "UPDATE ECU CAL SELECT ECU TYPE" menu.



4. Confirm the following before proceeding:

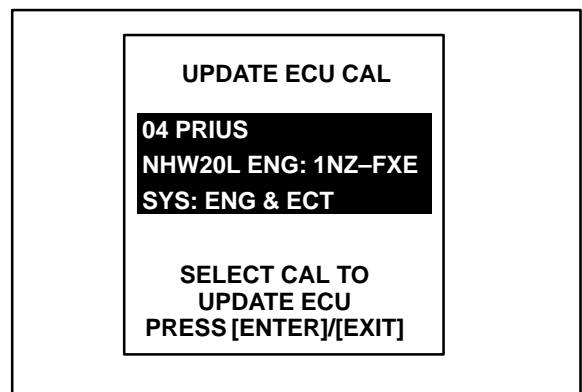
- IG is "OFF." Push the "POWER" switch once **without** depressing brake pedal until the indicator lamp turns off.
- Engine hood is opened.
- All electrical accessories are OFF (i.e., audio systems, dome lamp, navigation system, air conditioner, etc.).
- The parking brake is applied.



5. Press the "YES" key.

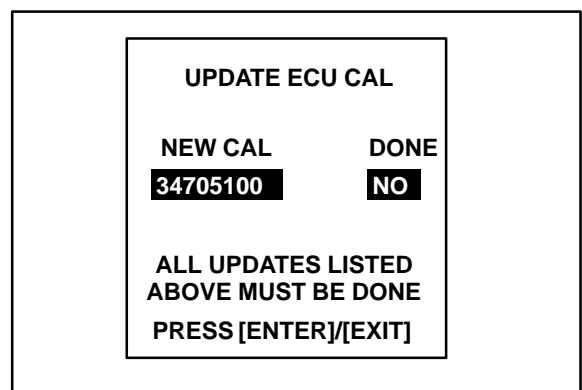
6. Confirm that the Diagnostic Tester displays the appropriate vehicle type. If it is not the correct vehicle, please refer to TSB No. SS002-01 "ECU Flash Reprogramming Process" to update the Diagnostic Tester.

7. Press the "ENTER" key.



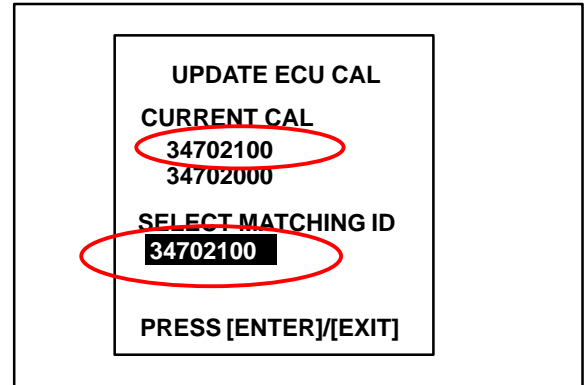
8. Confirm that the Diagnostic Tester displays "34705100" or later.

NOTE:
If the Diagnostic Tester displays "YES" instead of "NO," the Engine ECU has been reprogrammed already. Press the "EXIT" key and turn off the Diagnostic Tester. Proceed to Recalibration Label Installation (after Repair Procedure B in this TSB).

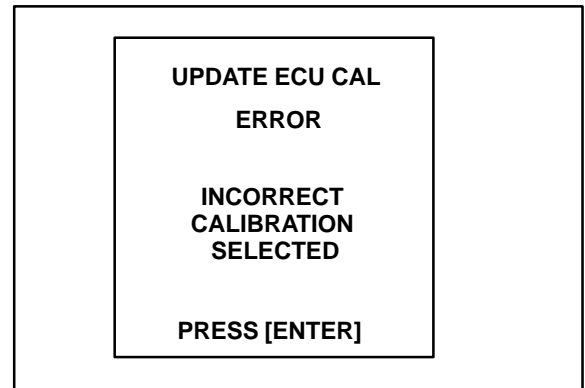


Repair Procedure B
(Continued)

9. Press the "ENTER" key.
10. Select the current matching calibration ID that is currently on the vehicle.
11. Press the "ENTER" key.



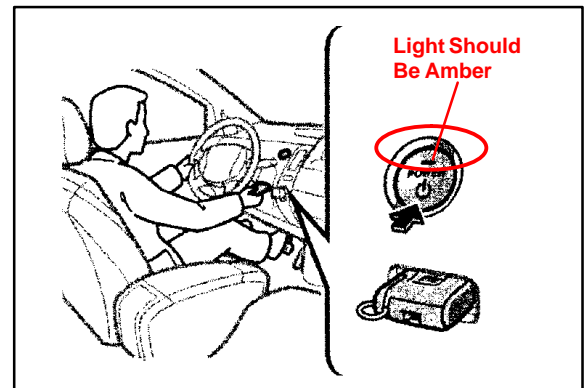
NOTE:
If you select the wrong calibration ID, the Diagnostic Tester will display the screen shown to the right. Please select the correct calibration ID again after pressing the "ENTER" key.



12. Push the "POWER" switch twice **without** depressing the brake pedal and confirm that the hybrid system is "IG-ON."

NOTE:

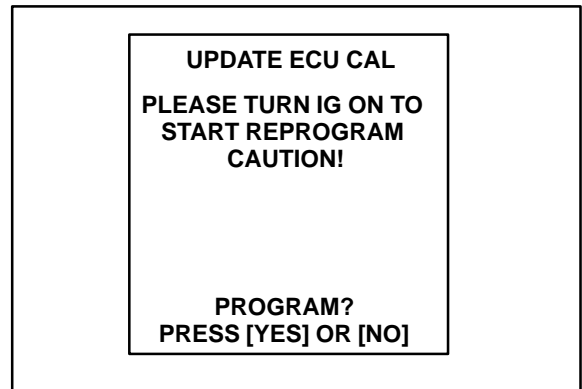
- Do not start the hybrid system if the "READY" light is on. You will need to turn the vehicle OFF and repeat step 12.
- Confirm that the power switch indicator is amber in color.



Repair Procedure B
(Continued)

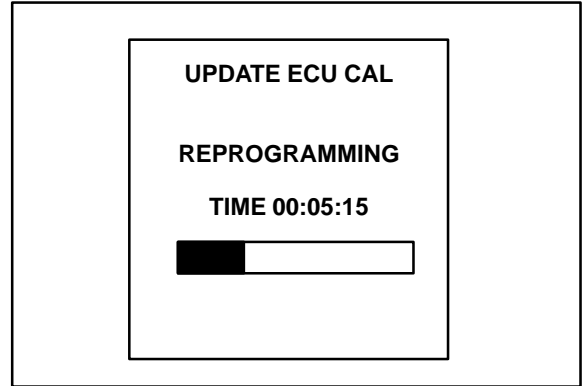
13. Press the "YES" key.

NOTE:
Do not do anything that will increase an electrical load to the vehicle after pressing the "YES" key.

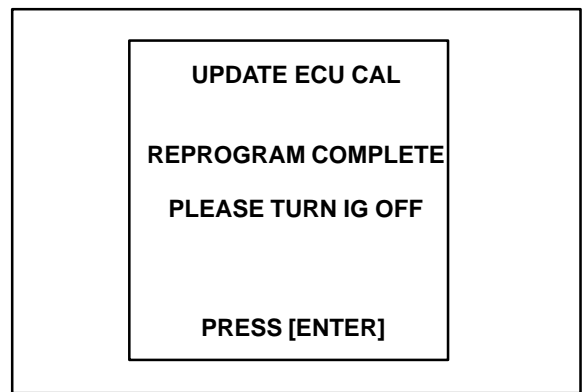


CAUTION:

- The progress bar will display after approximately one minute.
- It will take approximately 24 minutes to complete the reprogramming.
- During the reprogramming, do not touch the Diagnostic Tester and the cable in order to avoid reprogramming failures.
- After reprogramming, warning lights may be displayed on the dash and multi-display. DTCs may be set in the memory of various ECUs. This is normal and the codes must be cleared prior to release of the vehicle.



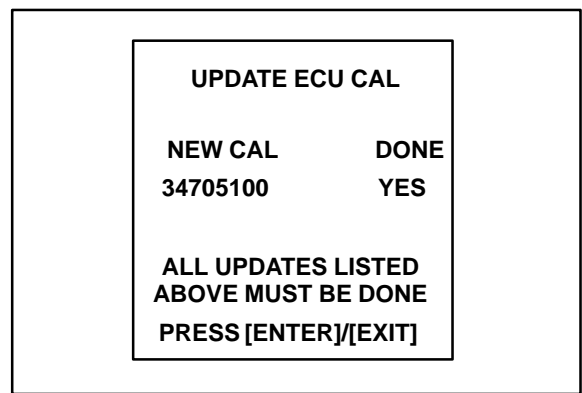
14. After approximately 24 minutes, the Diagnostic Tester will display the screen shown at right.



15. Push the "POWER" switch until the indicator lamp turns off without depressing the brake pedal.

16. Press the "ENTER" key.

17. Confirm that the Diagnostic Tester displays "34705100" (or a newer calibration) and "YES."



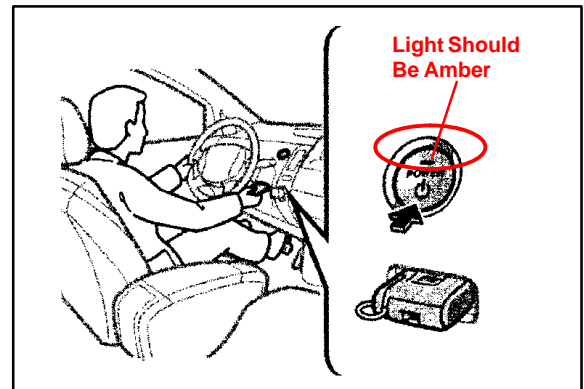
18. Press the "EXIT" key.

Repair Procedure B
(Continued)

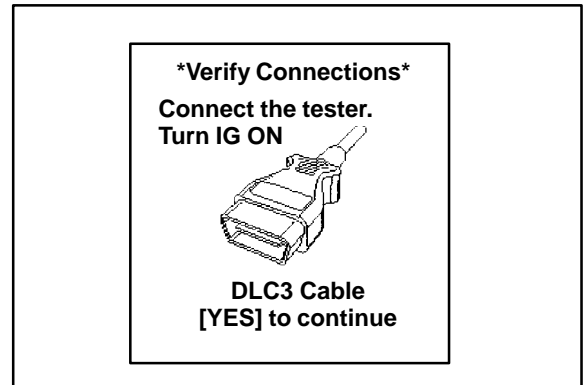
19. Push the "POWER" switch twice without the brake pedal depressed and confirm that the hybrid system is "IG-ON."

NOTE:

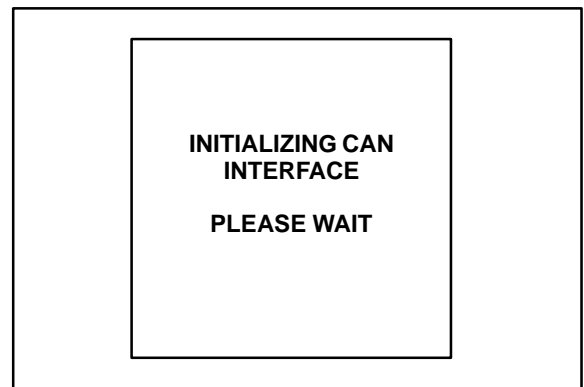
- Do not start the hybrid system in "READY" mode.
- Power switch indicator must be amber in color.



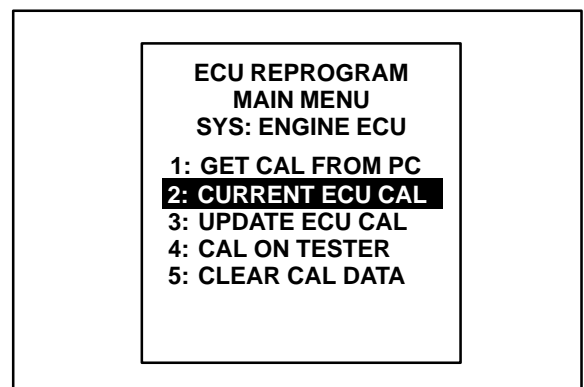
20. Press the "YES" key.



21. The Diagnostic Tester is establishing communication with the Engine ECU.

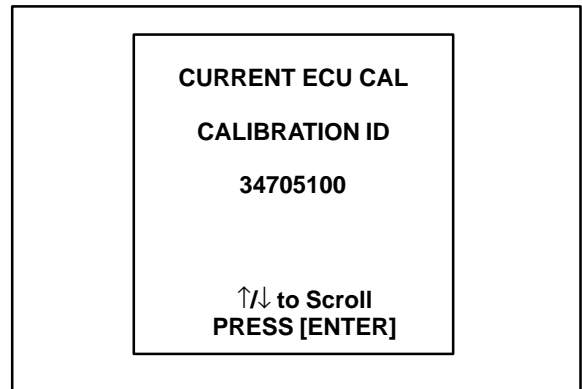


22. Select "2. CURRENT ECU CAL" from the "ECU REPROGRAM MAIN MENU."



Repair Procedure B
(Continued)

23. Confirm that the Diagnostic Tester displays the correct calibration ID: 34705100 (or a newer calibration).
24. Press the "ENTER" key.
25. Turn off the Diagnostic Tester.
26. Push the "POWER" switch once without depressing the brake pedal to turn ignition off.
27. Clear any DTC codes that have been set.



Recalibration Label Installation

1. Install the Recalibration (Authorized Modifications) Label.
 - A. Using a permanent marker, write the following information on the recalibration label:
 - ECU part number 89661–47101 (or newer part number).
 - Calibration number 34705100 (or newer calibration).
 - Dealer code.
 - Repair date.
 - Change authority (this TSB No.).
 - B. Install the Recalibration Label on the underside of the hood in front of the driver (see illustration).

