

MIL "ON" DTC P1CB7A2

Service Category Vehicle Interior

Section Meter/Gauge/Display

Market USA

Toyota Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2016	Prius	VDS(s): KARFU, KBRFU

Introduction

Some 2016 model year Prius vehicles may exhibit a MIL "ON" condition with Diagnostic Trouble Code (DTC) P1CB7A2 (Motor Generator System Voltage Low). The Hybrid Vehicle Control Computer (ECU) logic has been modified. Follow the Repair Procedure in this bulletin to address this condition.

NOTE

This Service Bulletin applies to both Nickel-Metal Hydride (NiMH) and Lithium Ion (Li-ion) equipped 2016 Prius vehicles.

Production Change Information

This bulletin applies to vehicles produced **BEFORE** the Production Change Effective VINs shown below.

MODEL	HV BATTERY TYPE	PRODUCTION CHANGE EFFECTIVE VIN
Prius	Nickle-Metal Hydride (NiMH)	JTDKBRFU#G3012347
	Lithium Ion (Li-ion)	JTDKARFU#G3014652

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Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
EL1712	Reprogram HV ECU	0.4	89981- #####	8A	99
EL1713	R & R Inverter Battery and Reprogram HV ECU	1.0	8598B-47010		

APPLICABLE WARRANTY

- This repair is covered under the Toyota Hybrid Vehicle System Component Warranty. This warranty is in effect for 96 months or 100,000 miles, whichever occurs first, from the vehicle's in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.

Parts Information

PART NUMBER			PART NAME	QTY
HV BATTERY TYPE	PREVIOUS	NEW		
Nickle-Metal Hydride (NiMH)	89981-47550 89981-47551	89981-47555	Computer, Hybrid Vehicle Control	1
Lithium Ion (Li-ion)	89981-47570 89981-47571	89981-47575		1
NiMH and Li-ion	8598B-47010		Battery, Inverter	1
—	00451-00001-LBL		Authorized Modifications Labels	1

NOTE

- The HV ECU should NOT be replaced as part of the Repair Procedure.
- Authorized Modifications Labels may be ordered in packages of 25 from the Materials Distribution Center (MDC) through *Dealer Daily – Parts – Dealer Support Materials Orders*.

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Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream 2.0*	ADE	TS2UNIT	1
Techstream Lite		TSLITEPDLR01	
Techstream Lite (Green Cable)		TSLP2DLR01	

* Essential SST.

NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 12.20.024 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.
- Use Techstream or an approved J2534 interface to perform flash reprogramming updates. Visit techinfo.toyota.com for more information regarding J2534 reprogramming.

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
GR8 Battery Diagnostic Station*	00002-MCGR8	1

* Essential SST.

NOTE

Additional SSTs may be ordered by calling 1-800-933-8335.

Calibration Information

HV ECU SUPPLIER	HYBRID BATTERY TYPE	ECU TYPE	HV ECU CALIBRATION ID	
			PREVIOUS	NEW
Denso	Nickel-Metal Hydride (NiMH)	Main	899834734000	899834734400
			899834757000	
			899834734100	
			899834757100	
			899834734200	
			899834757200	
			899834734300	
			899834757300	
		Sub	899854701000	899854701300
			899854707000	
			899854701100	
			899854707100	
			899854701200	
			899854707200	

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Calibration Information (continued)

HV ECU SUPPLIER	HYBRID BATTERY TYPE	ECU TYPE	HV ECU CALIBRATION ID	
			PREVIOUS	NEW
TMC	Nickle-Metal Hydride (NiMH)	Main	899834751000 899834760000 899834751100 899834760100 899834751200 899834760200 899834751300 899834760300	899834751400
		Sub	899854702000 899854702100 899854702200	899854702300
Denso	Lithium Ion (Li-ion)	Main	899834735000 899834758000 899834735100 899834758100 899834735200 899834758200 899834735300 899834758300	899834735400
		Sub	899854701000 899854707000 899854701100 899854707100 899854701200 899854707200	899854701300
TMC	Lithium Ion (Li-ion)	Main	899834752000 899834761000 899834752100 899834761100 899834752200 899834761200 899834752300 899834761300	899834752400
		Sub	899854702000 899854702100 899854702200	899854702300

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Repair Procedure

1. Using Techstream, check for the following stored DTC:
P1CB7A2 – Motor Generator System Voltage Low.
Is the DTC present?
 - **YES** — Perform steps 1 – 5 in the Repair Manual, then continue to step 2 of this bulletin.
Refer to TIS, applicable model and model year Repair Manual:
 - 2016 Prius:
Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid/Battery Control: Motor Generator Control System [\(for Nickel Metal Hydride Battery\)](#) / [\(for Lithium-Ion Battery\)](#): P1CB7A2; Motor Generator System Voltage Low”
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.
2. Was the result from step 5 in the Repair Manual, “P1CB7A2 only is output, or DTCs except the ones in the table below are also output”?
 - **YES** — Continue to step 3.
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.
3. Perform steps 6 – 26 in the Repair Manual to confirm the connection and system wiring condition. Repair the wiring and/or connection(s) as necessary BEFORE proceeding to step 4 of this Service Bulletin.

NOTE

Do NOT replace the inverter battery at this step.

Refer to TIS, applicable model and model year Repair Manual:

- 2016 Prius:
Engine/Hybrid System – Hybrid/Battery Control System – “Hybrid/Battery Control: Motor Generator Control System [\(for Nickel Metal Hydride Battery\)](#) / [\(for Lithium-Ion Battery\)](#): P1CB7A2; Motor Generator System Voltage Low”
4. Check the inverter battery operation.
 - A. Clear ALL DTCs.
 - B. IG-ON Ready-ON the vehicle for AT LEAST 5 minutes.
 - C. IG-ON Ready-OFF the vehicle for AT LEAST 2 minutes.
 - D. Repeat substeps B and C.
 - E. Conduct a Health Check.
 - F. Go to the motor generator.
 - G. Check if DTC P1CB7A2 has set and is “Confirmed.” Record “Confirmed” or “Not Confirmed” result for use in step 5.

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Repair Procedure (continued)

5. Judge re-calibration and/or necessary part replacement in the table below with the results from step 4.

HV MAIN SOFTWARE ID	RESULT OF STEP 4	PROCEED WITH REPAIR
899834751000 899834760000 899834734000 899834757000 899834752000 899834761000 899834735000 899834758000 899834751100 899834760100 899834734100 899834757100 899834752100 899834761100 899834735100 899834758100 899834751200 899834760200 899834734200 899834757200 899834752200 899834761200 899834735200 899834758200 899834751300 899834760300 899834734300 899834757300 899834752300 899834761300 899834735300 899834758300	Not Confirmed	Reprogram HV Software to Latest Calibration
	Confirmed	Replace Inverter Battery and Reprogram HV Software to Latest Calibration
Other Than Listed Above	Not Confirmed	—
	Confirmed	Replace Inverter Battery

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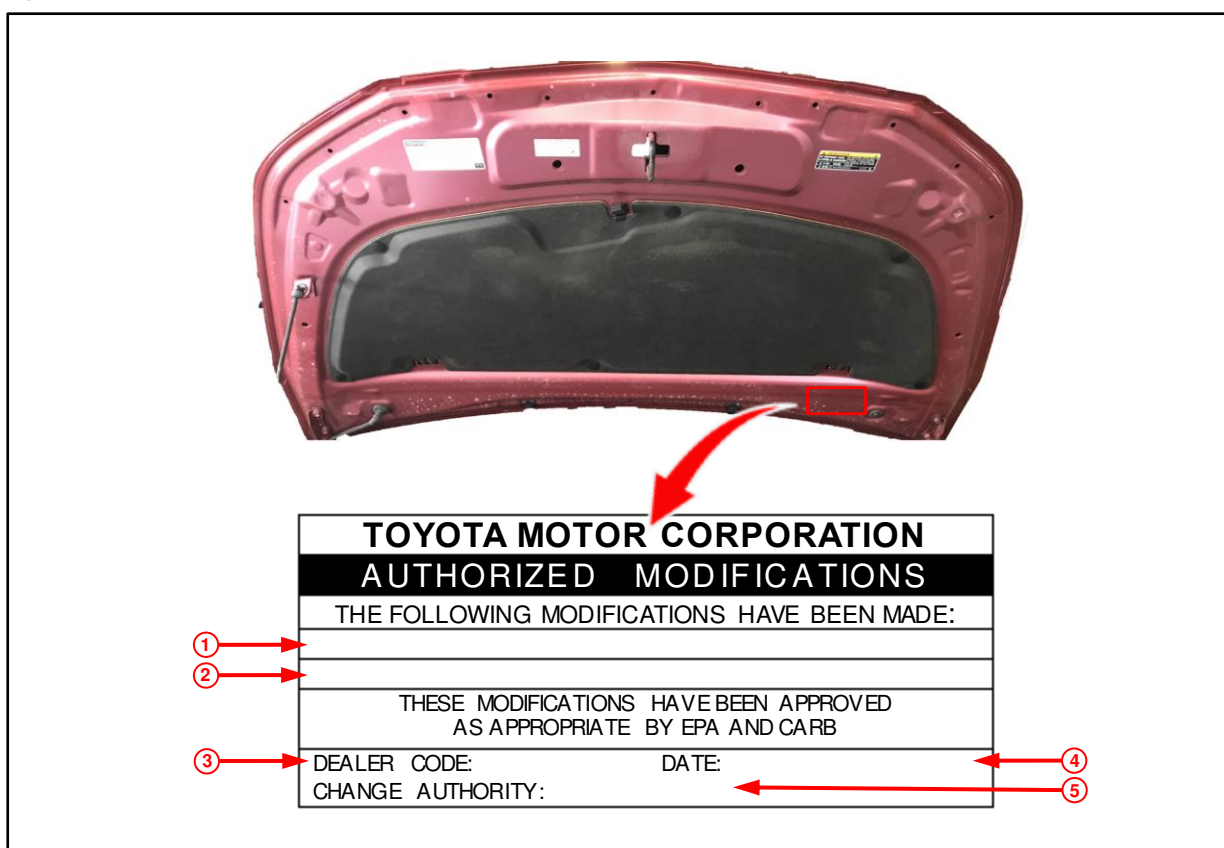
Repair Procedure (continued)

6. Check for the Authorized Modifications Label affixed to the vehicle in the location shown below. Confirm if the HV ECU calibration has been updated.

Is the calibration ID listed the latest HV ECU calibration?

- **YES** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.
- **NO** — Continue to step 8.

Figure 1. Location of Authorized Modifications Label for 2016 Prius



1	Replacement HV ECU Part Number (e.g., 89981-47572)
2	New Calibration ID (e.g., 899834734400)
3	Dealer Code

4	Date Completed
5	This SB Number

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Repair Procedure (continued)

7. Flash reprogram the HV ECU.

NOTE

- The GR8 Battery Diagnostic Station MUST be used in Power Supply Mode to maintain battery voltage at 13.5V while flash reprogramming vehicle.
- For details on how to use the GR8 Battery Diagnostic Station, refer to the ["GR8 Instruction Manual"](#) located at *TIS – Diagnostics – Tools & Equipment – Battery Diagnostics*.

Follow the procedures outlined in Service Bulletin No. [T-SB-0134-16](#) "Techstream ECU Flash Reprogramming Procedure," and flash the with the NEW calibration file update.

8. Prepare and install the Authorized Modifications Label.
 - A. Using a permanent marker, enter the following information on the label:
 - HV ECU part number [Refer to the **Parts Information** section for the **NEW PART NUMBER**]
 - Calibration ID(s) [Refer to the **Calibration Information** section for the **NEW CALIBRATION ID**]
 - Dealer Code
 - Repair Date
 - Change Authority [**This bulletin number**]
 - B. Affix the Authorized Modifications Label to the vehicle at the location shown in Figure 1.
The Authorized Modifications Label is available through the MDC, P/N 00451-00001-LBL.
9. Replace the inverter battery if required.
Refer to TIS, applicable model and model year Repair Manual:
 - 2016 Prius:
Engine/Hybrid System – Hybrid/Battery Control – "Hybrid / Battery Control: Inverter Battery: Removal / Installation"
10. Test drive the vehicle to confirm that the DTC does NOT reset.