

# Hybrid Regenerative Brake Transition Feeling Improvement

**Service Category** Brake

**Section** Brake System

**Market** USA

Toyota Supports  
 ASE Certification 

## Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2020 - 2022	Highlander HV	

## Introduction

Some drivers of 2020 – 2022 model year Highlander Hybrid vehicles may be sensitive to the momentary transition from regenerative braking to hydraulic braking under certain driving conditions, such as while driving downhill, or turning with light brake pedal application. The brake actuator control module can be updated to improve brake feeling for this condition. Follow the Repair Procedure in this bulletin to address this condition.

## Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
800159	Reprogram the Brake Actuator Assembly Control Module	0.8	44050-#####*	38	99

\*Warranty claim MUST be submitted with the correct 10-digit OFF. Choose the correct OFF for the vehicle being repaired by searching for the parts in the Electronic Parts Catalog using the VIN filter.

### APPLICABLE WARRANTY

- This repair is covered under the Toyota Basic Warranty. This warranty is in effect for 36 months or 36,000 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.

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### Parts Information

PART NUMBER	PART NAME	QTY
44050-#####	Actuator Assy, Brake	–
00451-00001-LBL	Authorized Modifications Label	1

#### NOTE

- The brake actuator assembly control module 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) ([portal.toyotamdc.com](http://portal.toyotamdc.com)) under item No. 00451-00001-LBL.

### Required Tools & Equipment

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
Battery Diagnostic Tool*	<a href="#">DCA-8000P T</a>	1

\*Essential SST.

#### NOTE

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

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

\*Essential SST.

#### NOTE

- Only ONE of the Techstream units listed above is required.
- GTS+ software version 2023.03.001.02 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](http://techinfo.toyota.com) for more information regarding J2534 reprogramming.

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### Calibration Information

MODEL	ENGINE	CALIBRATION ID	
		PREVIOUS	NEW
Highlander HV	A25A-FXS	F15264872300 F15264872400 F15264872500 F152648J4000	<a href="#">F152648L5000</a>

### Repair Procedure

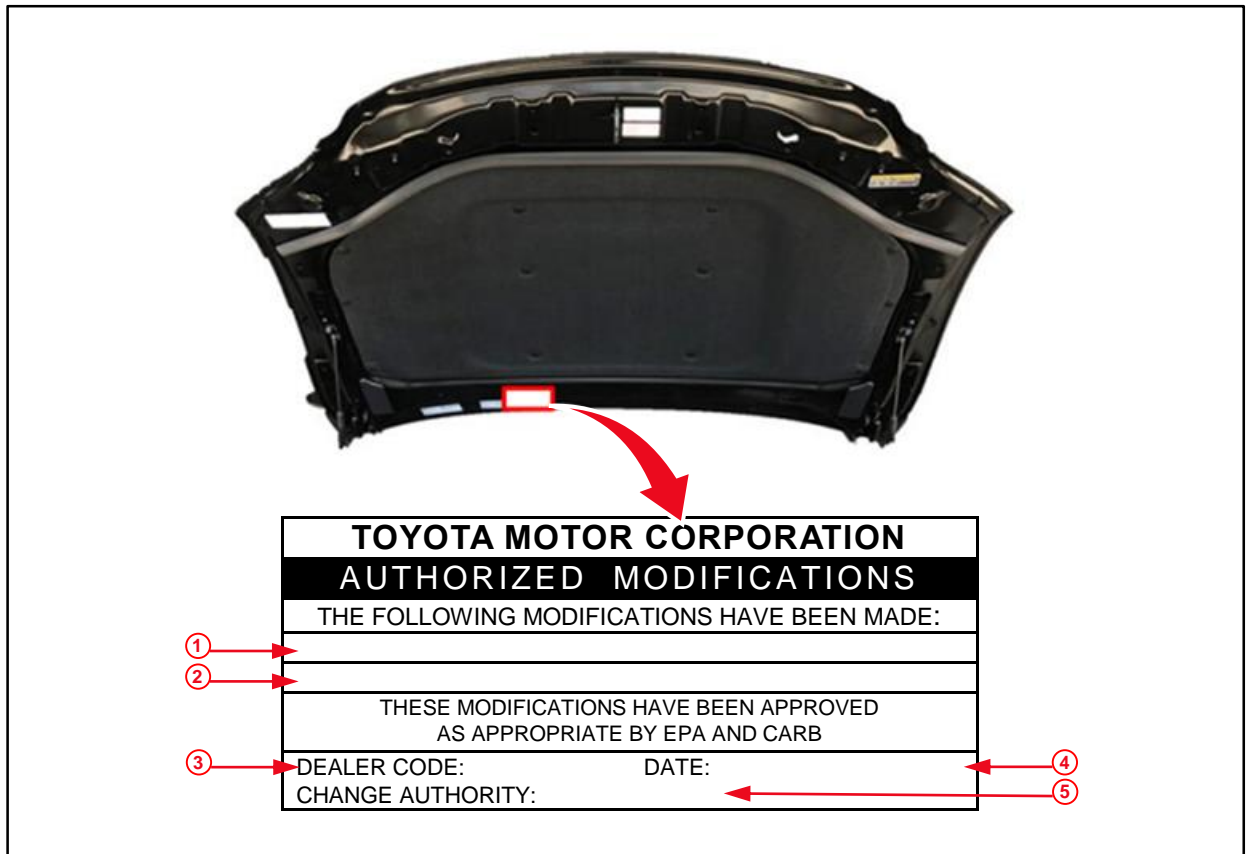
1. Confirm there are NO pre-existing conditions related to the brake system or hybrid systems.
  - A. Are there ANY brake or hybrid related DTCs?
    - **YES** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.
    - **NO** — Go to step 2.
  - B. Are the brake and hybrid systems operating to factory conditions?
    - **YES** — Continue to step 2.
    - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.
  
2. Does the driver sensation match the description of the momentary transition from regenerative braking to hydraulic braking under certain driving conditions, such as while driving downhill, or turning with light brake pedal application?
  - **YES** — Continue to step 3.
  - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

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### Repair Procedure (continued)

3. Use Techstream to confirm if the brake actuator assembly control module calibration has been updated and check for the Authorized Modifications Label affixed to the vehicle in the location shown below.  
 Is the calibration ID listed in Techstream and on the label the latest brake actuator assembly ECU calibration?
  - **YES** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.
  - **NO** — Continue to step 4.

**Figure 1. Location of Authorized Modifications Label on 2020 – 2022 Highlander Hybrid**



<b>1</b>	Brake Actuator Assembly Part Number (e.g., 44050-#####)
<b>2</b>	New Calibration ID (e.g., Main – F1526-48L5000)
<b>3</b>	Dealer Code

<b>4</b>	Date Completed
<b>5</b>	This SB Number

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### Repair Procedure (continued)

4. Flash reprogram the brake actuator assembly control module.

**NOTE**

- The battery diagnostic tool **MUST** be used in Power Supply Mode to maintain battery voltage at 13.5V while flash reprogramming the vehicle.
- For details on how to use the battery diagnostic station, refer to the [DCA-8000 Instruction Manual](#) located at *TIS – Diagnostics – Tools & Equipment – Battery Diagnostics*.

Follow the procedures outlined in [T-SB-0107-20](#), *GTS+ ECU Flash Reprogramming With Security Signature*, and [T-SB-0057-23](#), *GTS+ ECU Flash Reprogramming Procedure*, and flash the brake actuator assembly control module with the NEW calibration file update.

5. Prepare and install the Authorized Modifications Label.
  - A. Using a permanent marker, enter the following information on the label:
    - Brake Actuator Assembly 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. Install the Authorized Modifications Label onto the vehicle at the location shown in Figure 1. The Authorized Modifications Label is available through the MDC, P/N 00451-00001-LBL.
6. Clear ANY DTCs and test-drive the vehicle to confirm the condition is no longer present.