



Technical Service BULLETIN

November 7, 2003

Title:

ECM CALIBRATION: SHIFT FEELING ENHANCEMENT

Models:

'04 – '05 Sienna

REVISED

TC007-03

TRANSMISSION & CLUTCH

TSB REVISION NOTICE:

- June 1, 2005: The following changes have been implemented since first publication: 2005 model year Sienna vehicles added to Applicable Vehicles. Introduction and Note updated on page 1. New part, Brake Actuator Assembly, added. Calibration Identification Chart updated to include 2005 model year Sienna calibration IDs. Repair Procedure expanded with instructions for vehicles with laser cruise control.
- December 11, 2003: Two Previous Calibration IDs have been added to the Calibration Identification chart.

The previous TSB should be discarded.

Introduction

To improve the transmission shift feeling during specific operating modes, the Engine Control Module (ECM) (SAE term: Powertrain Control Module/PCM) calibration has been revised. These improvements include:

- Reduced downshift lag when accelerating at speeds from 10 to 20 mph.
- Less gear hunting when driving on/off accelerator pedal at 20 to 30 mph (for example: during heavy rush-hour traffic).
- Improved response rate during heavy acceleration from a stop.

NOTE:

- Version 12.2a or later Diagnostic Tester software is required to perform this procedure.
- Before proceeding, verify the ECM (PCM) calibration has NOT been updated by checking for the Authorized Modifications Label (shown in step 1 of the Repair Procedure).
- Harsh ATM shifting may result if any Repair Procedure steps are omitted (specifically steps 5 and 11 on page 6).

Applicable Vehicles

- 2004 – 2005 model year Sienna vehicles.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
TC3001	Recalibrate ECM Engine & Transmission	0.8	89661-0809#		
Combo A	R & R Brake Actuator Assembly, (Vehicles Equipped With Laser Cruise Control)	1.2	89661-0810# 89661-08120 89661-08130	26	99

Applicable Warranty*:

This repair is covered under the Toyota Federal Emissions 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.



Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
44050-08070	44050-08071	Sienna 2WD Actuator Assembly, Brake (With VSC ECU)	1
44050-08090	44050-08091	Sienna 4WD Actuator Assembly, Brake (With VSC ECU)	1
N/A	00451-00001-LBL	Authorized Modifications Label	1

NOTE:

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

Required SSTs

ITEM NO.	SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QTY	DRW**
1	<p>Toyota Diagnostic Tester Kit*</p> <p>NOTE:</p> <ul style="list-style-type: none"> All components from this kit/set are required 12 Megabyte Diagnostic Tester Program Card (P/N 01002593-005) with version 12.2a Software (or later) is required 	TOY220036	1	9
2	<p>CAN Interface Module Kit*</p> <p>NOTE:</p> <ul style="list-style-type: none"> All components from this kit/set are required 	01002744	1	9

* Essential SSTs.

** Refers to drawer number in SST Storage System.

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
Identification
Chart**

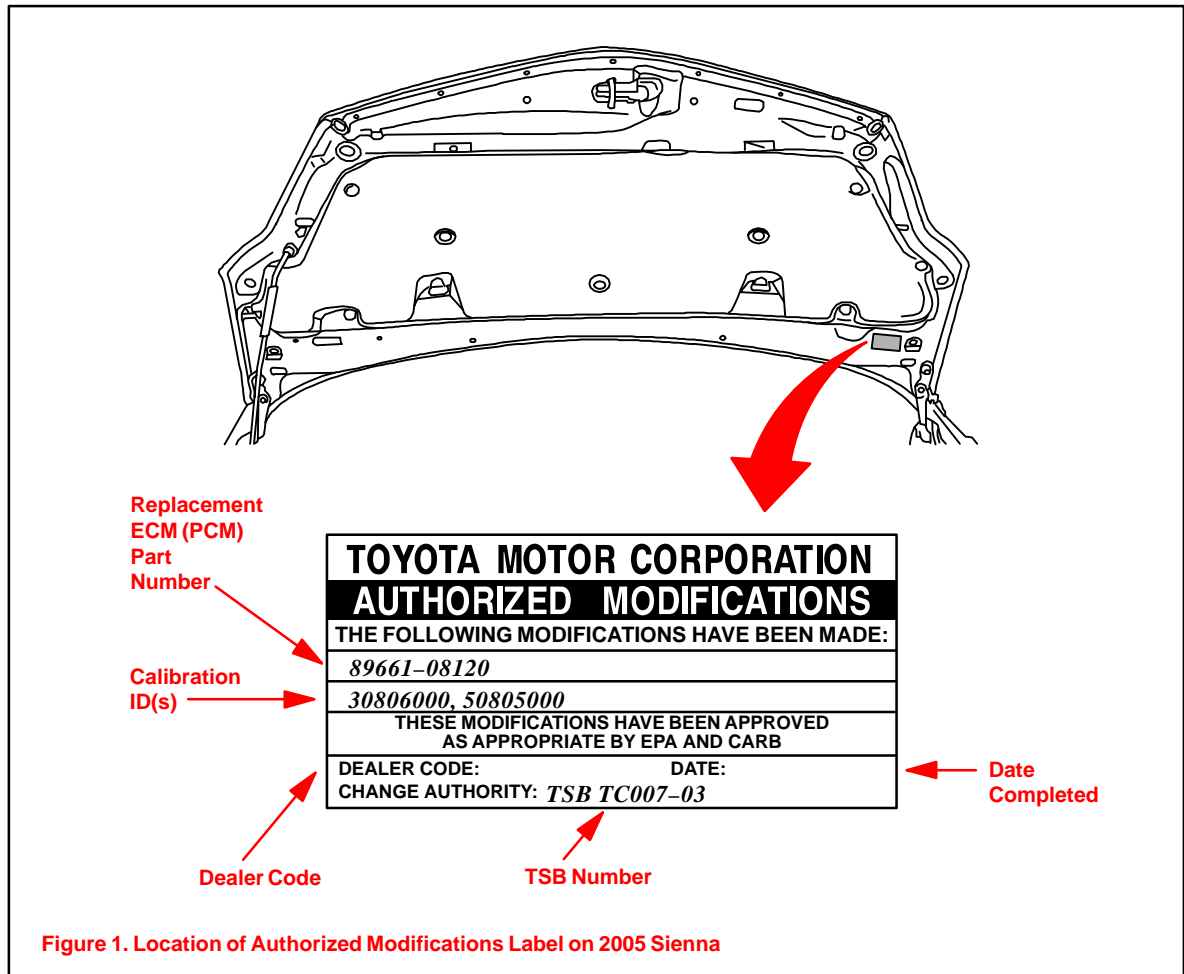
MODEL YEAR	MODEL	ECM (CPU)	PREVIOUS CALIBRATION ID	NEW CALIBRATION ID	VDS
2004 & 2005	2WD	Main	30801000 30801100 30801200 30801300 30804000	30806000	ZA22C ZA23C
		Sub	50801000 50801100 50803000	50805000	
	4WD	Main	30802000 30802100 30802200 30802300 30805000	30807000	BA22C BA23C
		Sub	50802000 50802100 50804000	50806000	

NOTE:

- Calibration files on the Diagnostic Tester use the following abbreviations:
 - 2WD = Front Wheel Drive
 - 4WD = All Wheel Drive
- 2004 model year Sienna vehicles, which have been flash reprogrammed using the procedures in this TSB will contain upgraded 2005 model year OBD II logic and will require VIN input. Refer to the 2005 model year Sienna Repair Manual information on the Technical Information System (TIS) when checking Powertrain Diagnostic Trouble Codes (DTCs) on 2004 model year Sienna vehicles that have been reprogrammed.

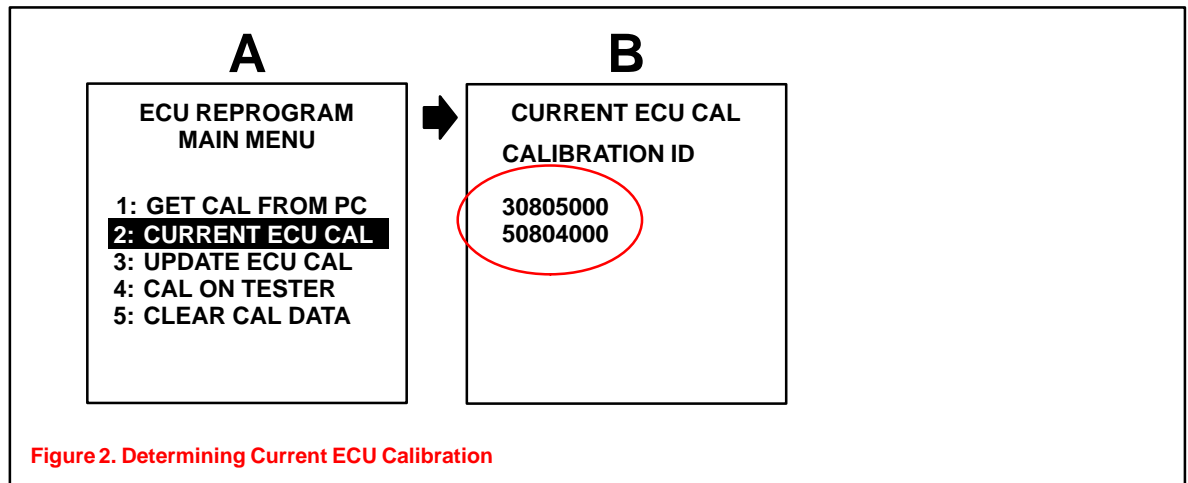
Repair Procedure

1. Check for the Authorized Modifications Label affixed to the vehicle in the location shown in Figure 1. Confirm if ECM (PCM) calibration has been updated. If not the latest ECM (PCM) calibration — go to step 2.



Repair Procedure
(Continued)

2. Connect the Diagnostic Tester to the vehicle and select CURRENT ECU CAL from the ECU REPROGRAM MAIN MENU. Determine the vehicle's current ECU calibration (see Figure 2).
 - The sample screen prints seen below are the 12.1a software version and may differ from subsequent software versions.



NOTE:

- If Calibration ID matches “Previous Calibration ID” as shown in Calibration Identification Chart on page 3, proceed with flash reprogramming.
- If Calibration ID matches “New Calibration ID” as shown in Calibration Identification Chart, this vehicle has already been programmed. Refer to TIS for diagnostic procedures applicable to any stored DTCs.

3. If ECU calibration ID is not the same as the “New Calibration ID” listed previously, proceed to Flash Reprogram ECM (PCM).

4. Flash Reprogram ECM (PCM)

Follow the procedures outlined in Toyota TSB No. SS002–01, “*ECU Flash Reprogramming Process*,” and flash the ECM (PCM) with the new calibration file update.

NOTE:

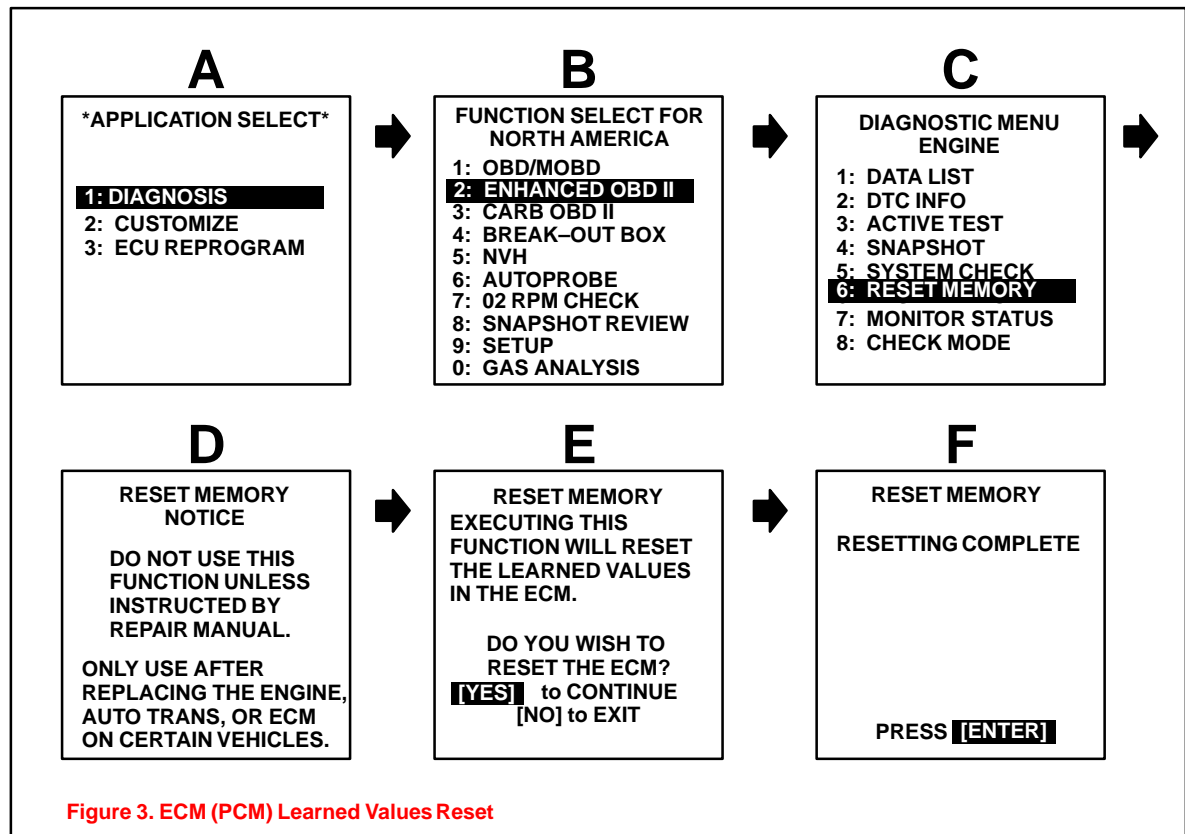
If the “Check Engine” light is ON when the ignition is turned back on to begin the reprogramming process, a scan tool cable problem exists. Refer to TSB No. SS004–01, “*ECU Flash Reprogramming Error Message*.”

Repair Procedure
(Continued)

5. **Reset the ECM (PCM) learned values** using the diagnostic tester. Refer to the procedures below.
- The sample screen prints seen below are the 12.1a software version and may differ from subsequent software versions.

NOTE:

Failure to reset the ECM (PCM) memory will result in continued ATM shifting complaints.



6. Follow the procedures outlined in TSB No. EG045–04, “Entering VIN During ECM (PCM) Replacement and/or DTC P0630,” and write the VIN to the ECM (PCM).
7. For vehicles **NOT** equipped with laser cruise control, proceed to step 10.
8. For 2004 model year vehicles equipped with laser cruise control, a new Brake Actuator Assembly (with VSC ECU) must be installed at the time of recalibration. If vehicle is equipped with laser cruise, use the **Parts Information** table on page 2 to order the correct part (2WD or 4WD) and follow the instructions listed on TIS: 2004 model year Sienna Repair Manual: *Brake: ABS & Traction Actuator Assy: Replacement* to replace the Brake Actuator Assembly (with VSC ECU).
9. Follow the procedures outlined in TSB No. BR001–04, “Zero Point Calibration,” to calibrate the sensors affected by the Brake Actuator Assembly replacement.
10. Start the engine and warm it up to normal operating temperature before test-driving.
11. Test-drive the vehicle to confirm proper vehicle operation (and proper laser cruise control operation if so equipped).

**Repair
Procedure**
(Continued)

12. Enter the required information on the Authorized Modifications Label and affix it to the vehicle at the location shown in Figure 1 (page 4). The Authorized Modifications Label is available through the MDC, P/N 00451–00001–LBL.
13. Calibration update is complete.

NOTE:

- Select premium unleaded gasoline with an Octane Rating of 91 or higher for optimum engine performance.
- The effect of the new calibration may become more apparent after several days of driving as the ECM (PCM) “learned values” are re-established from the customer’s driving.