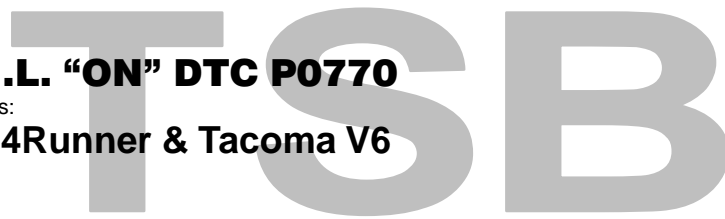




Technical Service BULLETIN

December 24, 2002

Title: **M.I.L. "ON" DTC P0770**
Models: **'02 4Runner & Tacoma V6**



ENGINE
EG025-02

Introduction Some owners of 2002 model year 4Runner vehicles and Tacoma trucks equipped with V6 engines and automatic transmissions may experience a M.I.L. "ON" condition with DTC P0770 (Shift Solenoid "E" Malfunction) stored when operated under the following specific operating conditions:

- Operation in ambient temperatures above 90°F.
- When towing a trailer or carrying a heavy load.
- When climbing a long uphill grade.

The ECM logic (SAE term: Powertrain Control Module/PCM) has been revised and the transmission valve body has been improved to prevent this condition from occurring.

Applicable Vehicles

- **2002** model year **4Runner** vehicles produced **BEFORE** the Production Change Effective VINs shown below.
- **2002** model year **Tacoma** trucks equipped with V6 engines and automatic transmissions produced **BEFORE** the Production Change Effective VIN shown below.

Production Change Information

MODEL	PLANT	PRODUCTION CHANGE EFFECTIVE VIN
4Runner	Tahara	JT3GN8*R*20259664
		JT3HN8*R*20392220
	Hino	JT3GN8*R29001238
		JT3HN8*R*29078746
Tacoma V6	NUMMI	5TE***2N#3#####

Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
366251	R & R Valve Body (4Runner)	2.2	35410-35610 35410-35620	87	99
EG2008	Recalibrate ECM (PCM) (4Runner 2WD)	0.5	89666-35580		
EG2008	Recalibrate ECM (PCM) (4Runner 4WD)	0.5	89666-35590		
366251	R & R Valve Body (Tacoma)	2.2	35410-35490		
EG2009	Recalibrate ECM (PCM) (Tacoma 2WD)	0.5	89666-04030		
EG2009	Recalibrate ECM (PCM) (Tacoma 4WD)	0.5	89666-04020		

Applicable Warranty*:

- **Recalibrate ECM (PCM) 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 for ECM (PCM).**
- **R & R of the Valve Body is covered under the Toyota Powertrain Warranty. This warranty is in effect for 60 months or 60,000 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
35410–35610	35410–35611	Valve Body – 2WD 4Runner	1
35410–35620	35410–35621	Valve Body – 4WD 4Runner	1
35410–35490	35410–35491	Valve Body – 2WD Tacoma PreRunner	1
		Valve Body – 4WD Tacoma	1

Calibration Information

PREVIOUS CALIBRATION ID NUMBER	NEW CALIBRATION ID NUMBER	MODEL YEAR	MODEL
33512000	33512100	2002	4Runner 2WD
33513000	33513100		4Runner 4WD
30404000	30404100		Tacoma 2WD
30403000	30403100		Tacoma 4WD

Required SSTs

SPECIAL SERVICE TOOLS	PART NUMBER	QUANTITY
Toyota Diagnostic Tester Kit* 	01001271	1
12 Megabyte Diagnostic Tester Program Card with version 9.3a Software (or later)* 	01002593-005	1
Gasket Seal Cutter 	09032–00100	1

* Essential SSTs.

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

Required Tools & Material

TOOLS & MATERIALS	PART NUMBER	QUANTITY
Dextron III (Dextron II) Transmission Fluid	00718–ATF00	2.1 Quarts
Standard Metric Socket Set and Hand Tools	–	As Required
FIPG – Threebond 1281 or Equivalent	08826–00090	As Required

Repair Procedure

Verify Vehicle Condition

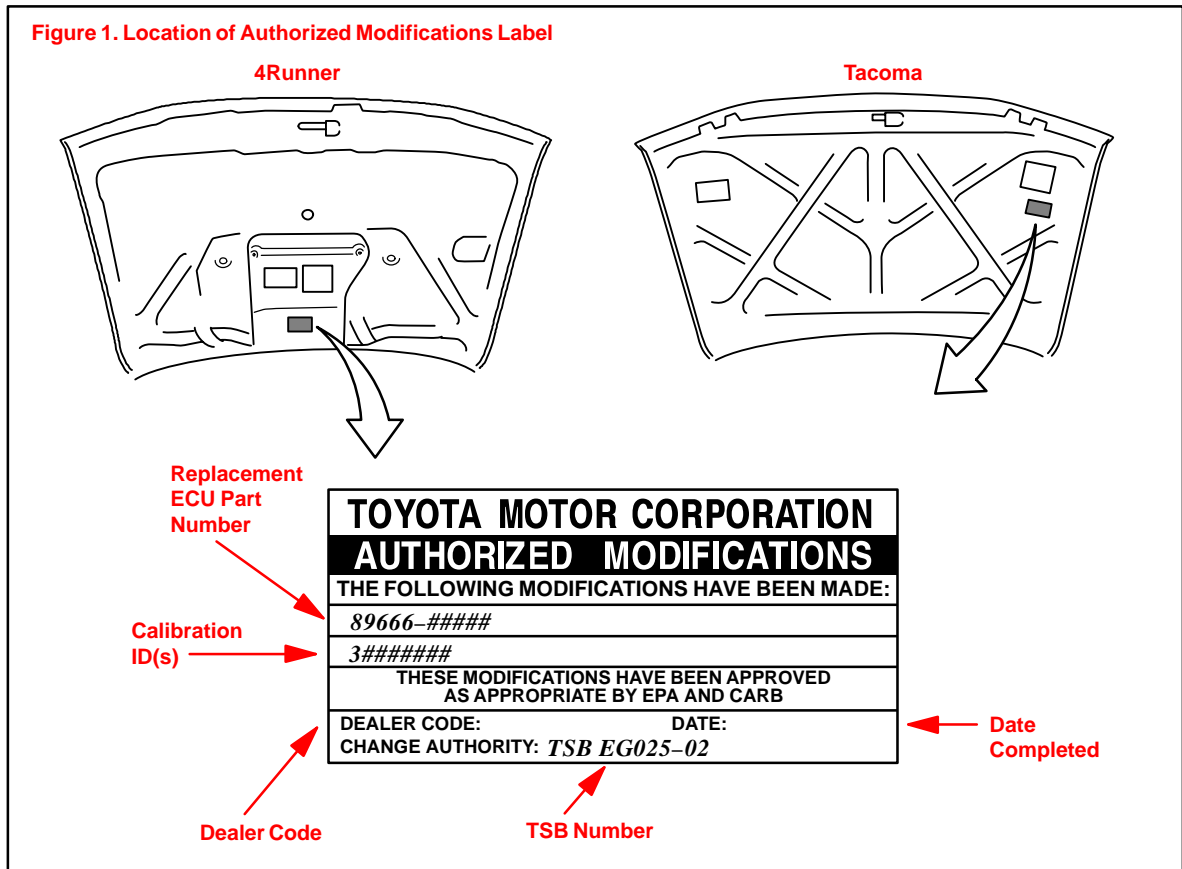
1. Did M.I.L. "ON" DTC P0770 occur under any one of the following conditions?
 - A. Operation of vehicle in ambient temperatures above 90°F.
 - B. While towing or carrying a heavy load.
 - C. While climbing a long uphill grade.

If YES – go to STEP 2.

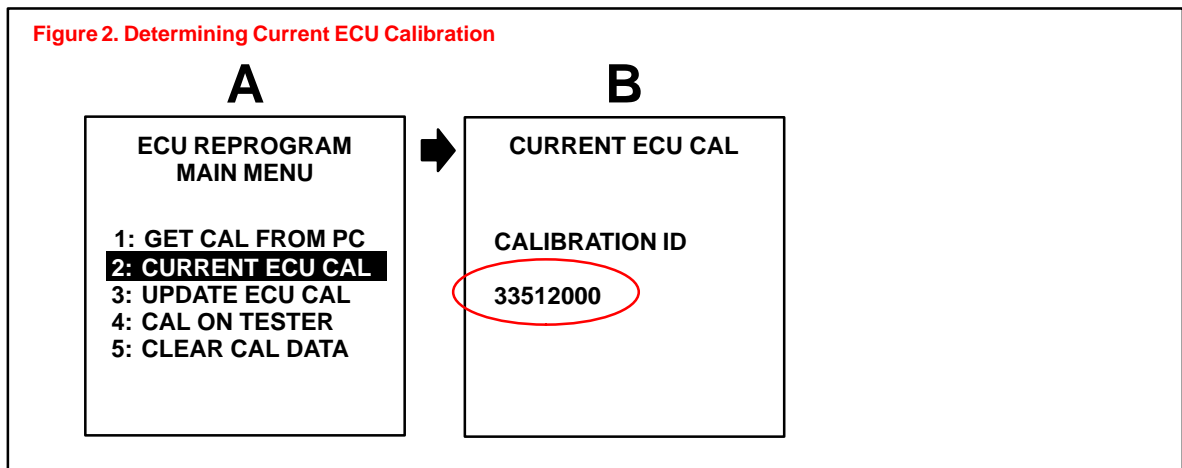
If NO – TSB does not apply – refer to TIS or appropriate 2002 Repair Manual DTC P0770 Diagnostic Chart to repair vehicle.

2. Check for Authorized Modifications label affixed to the vehicle in the location shown in Figure 1. Confirm if ECM (PCM) calibration has been updated. If no label or label does not list the "New Calibration ID Number" listed above – Go to Step 3.

Repair Procedure
(Continued)



3. 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).



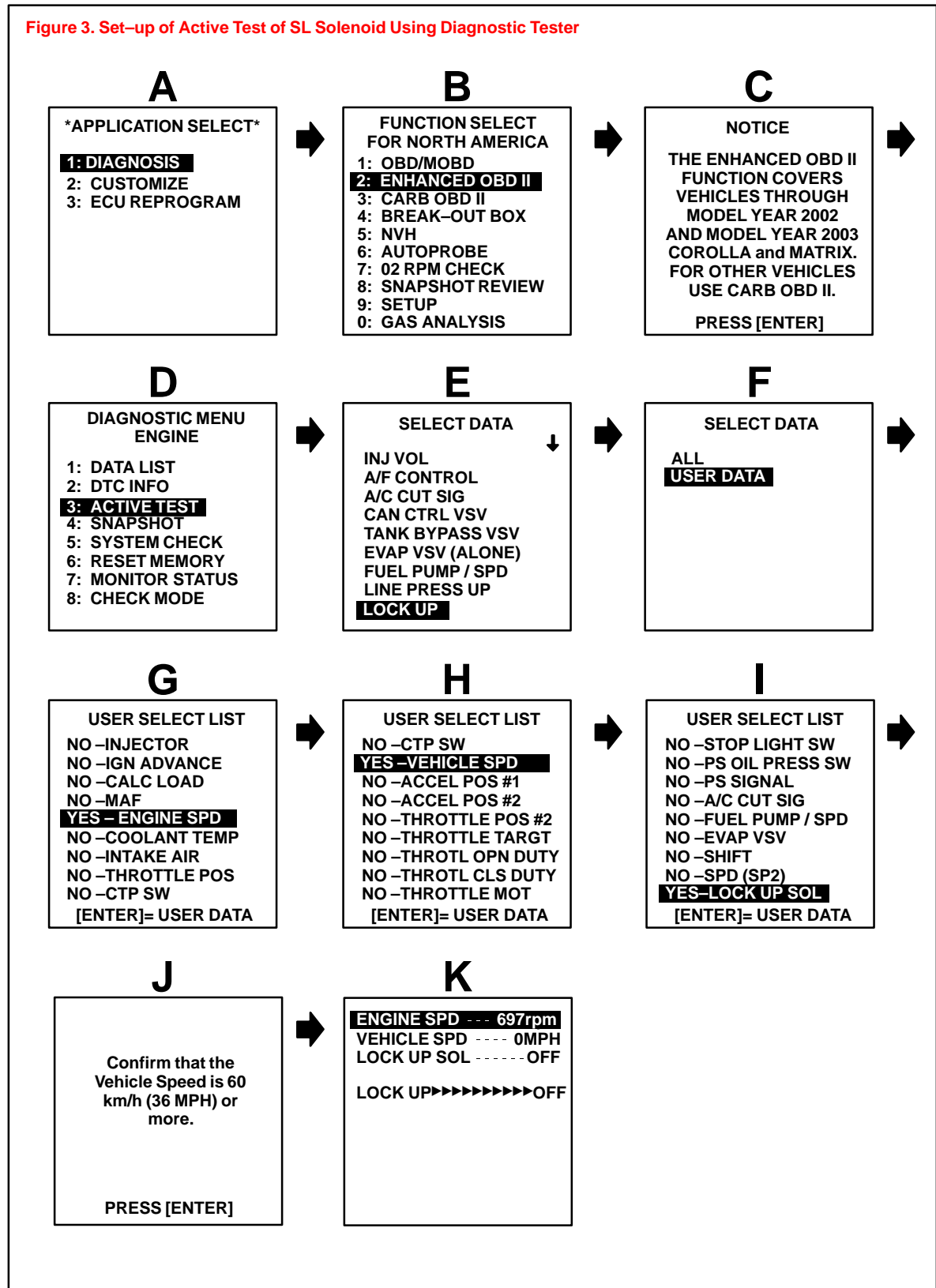
NOTE:

- If Calibration ID matches "Previous Calibration ID" as shown on page 1, proceed with flash reprogramming.
- If Calibration ID matches "New Calibration ID" as shown on page 1, this vehicle has already been reprogrammed. Refer to Repair Manual for diagnosis.

4. If ECU calibration ID is not "New Calibration ID" proceed to Step 5. If ECU calibration ID is "New Calibration ID," refer to TIS or appropriate 2002 Repair Manual DTC P0770 Diagnostic Chart to repair vehicle.

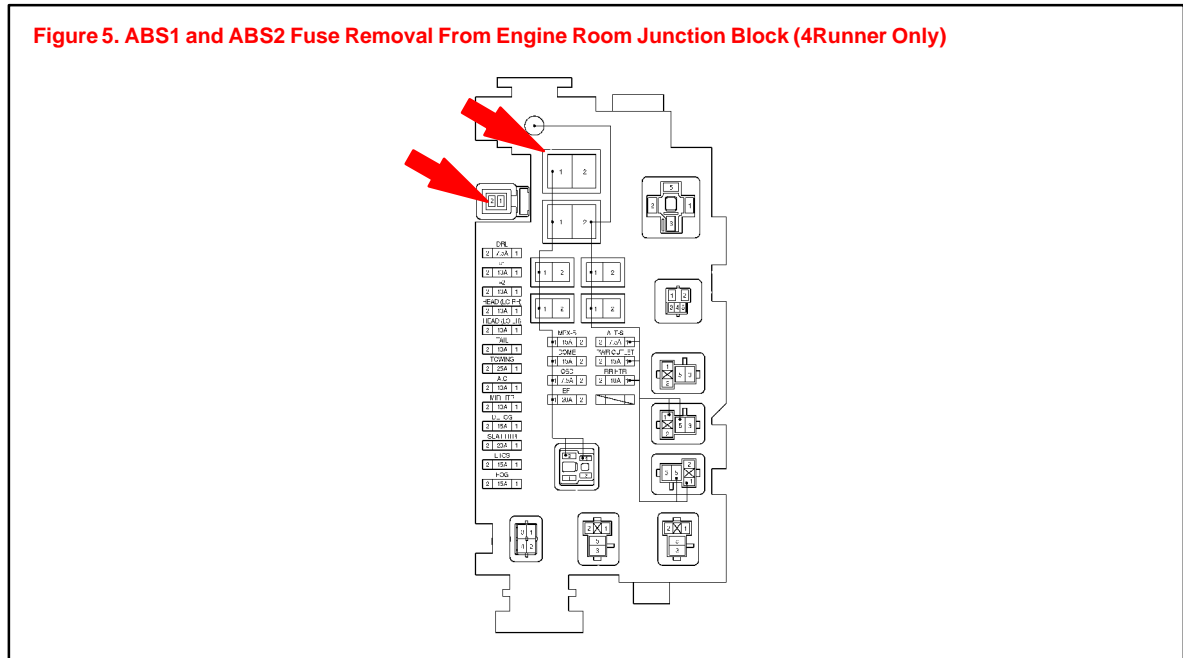
Repair Procedure
(Continued)

5. Perform Active Test of lockup Solenoid (SL Solenoid or Solenoid "E") using Diagnostic Tester.
 - A. Set up Diagnostic Tester (see Figure 3).



**Repair
Procedure**
(Continued)**Flash Reprogram ECM (PCM)**

1. **4Runner only:** Remove the ABS1 and ABS2 fuses from Engine Room Junction Block (see Figure 5.)

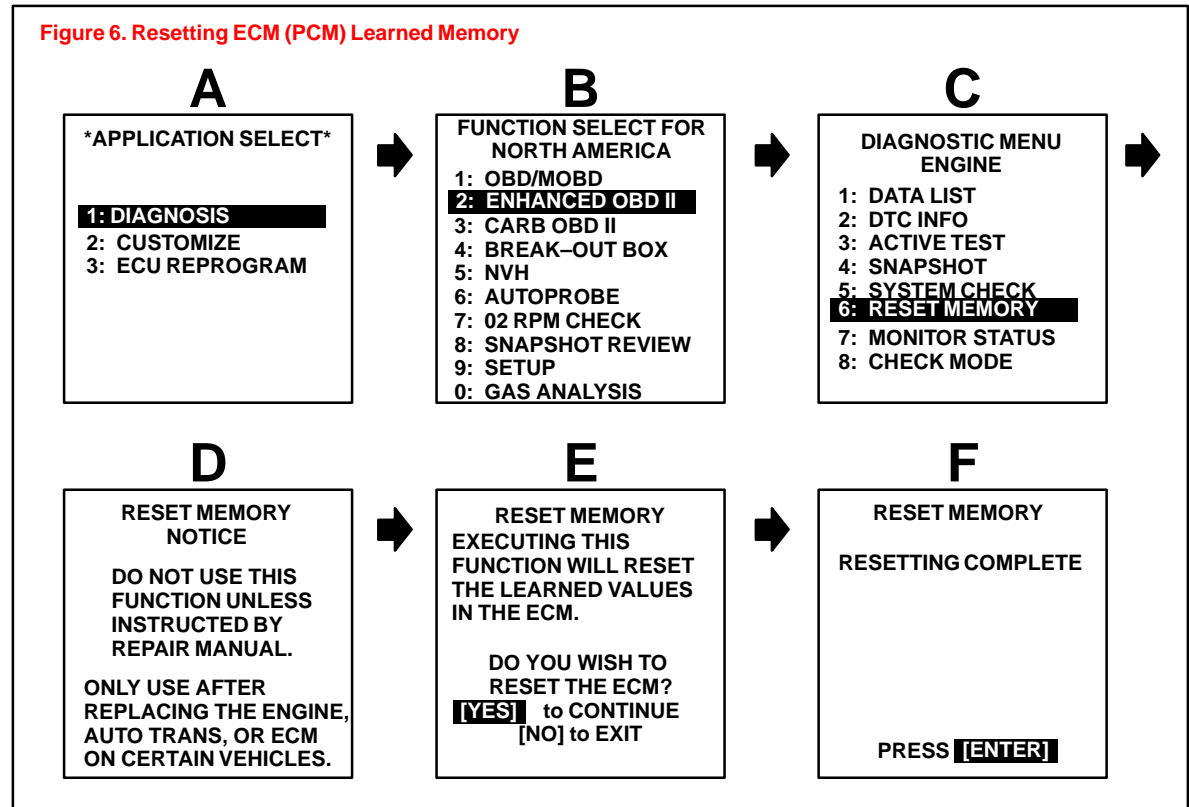


2. Follow the procedures outlined in TSB SS002–01, “ECU Flash Reprogramming Process,” and flash the ECM (PCM) with the new calibration file update.
3. Enter the required information on the Authorized Modifications Label and affix it to the vehicle at the location shown in Figure 1 (page 3). The Authorized Modifications Label is available through the MDC, P/N 00451–00001–LBL.
4. **4Runner only:** Reinstall the ABS1 and ABS2 fuses (Figure 5.)
5. Use the Diagnostic Tester to delete any ABS/VSC DTCs that may have been set during this repair procedure.
6. Calibration update is complete.

Repair Procedure
(Continued)

Valve Body Replacement

1. Replace valve body assembly per TIS or applicable Repair Manual (2002 Tacoma, Volume 2, Automatic Transmission [A340E, A340F] or 2002 4Runner, Volume 2, Automatic Transmission).
2. Reset the ECM (PCM) learned and memory values. Refer to the procedures below (Figure 6).



3. Start the engine and warm it up to normal operating temperature before test-driving.

NOTE:

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.

4. Test drive and confirm lockup operation and no recurrence of DTC P0770.