TOYOTA
SCION
Technical Service BULLETIN
February 4, 2004

Title:

ZERO POINT CALIBRATION

Models:

'04 – '05 4Runner, Camry, Highlander, Land Cruiser, RAV4, Sienna, Solara, Tundra, & Scion xB with VSC

BRAKES
REVISED
BR001-04

TSB REVISION NOTICE:

- **March 7, 2006: 2005 model year has been added to Applicable Vehicles. The Required SSTs table has been updated to the current software. The screen flows in step 2 of the "Calibration Procedure With Diagnostic Tester" section have been updated.**
- **February 16, 2004: Calibration Procedure clarified on page 2 (step 2) and page 4 (step 1).**

Previous versions of this TSB should be discarded.

Introduction

The following information is intended to clarify the repair manual procedures for Zero Point Calibration and sensor checks after the replacement of any of the following components.

- Vehicle Stability Control Computer
- Steering Angle Sensor
- Yaw Rate Sensor
- Deceleration Sensor

Zero point calibration of the above sensors must also be performed when replacing or repairing steering related parts. These steps are necessary for the correct and accurate repair of VSC related systems.

Applicable Vehicles

- **2004 – 2005** model year **4Runner, Camry, Highlander, Land Cruiser, RAV4, Sienna, Solara, Tundra,** and **Scion xB** vehicles **equipped with VSC**.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Required SSTs

ITEM NO.	SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QTY	DRW**
1	**Toyota Diagnostic Tester Kit***  NOTE: • All components from this kit/set are needed • 12 Megabyte Diagnostic Tester Program Card (P/N 01002593–005) with version 13.3a Software (or later) is needed	TOY220036	1	9
2	**CAN Interface Module Kit***  NOTE: All components from this kit/set are needed	01002744	1	9
3	**Diagnostic Check Wire*** 	09843–18040	1	18

* Essential SSTs.

** Refers to drawer number in SST Storage System.

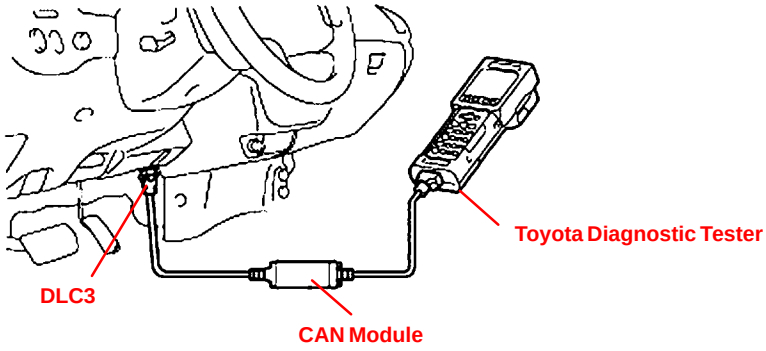
NOTE:

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 Procedure With Diagnostic Tester

Zero Point Calibration Procedure Using Diagnostic Tester

1. Connect Diagnostic Tester to DLC3.



2. Follow the flow below for the calibration procedure. If the vehicle is equipped with automatic transmission (A/T), ensure that the shift lever is in the “P” range and the parking brake is applied. If the vehicle is equipped with manual transmission (M/T), ensure that the parking brake is applied.

NOTE:

While performing the Zero Point Calibration, do NOT tilt, move, or shake the vehicle. The vehicle must remain in a stationary condition throughout the entire process. Be sure to perform the procedure on a level surface with an inclination of less than 1%.

Zero Point Calibration

WHEN THIS SCREEN APPEARS:	DO THIS:
A TOYOTA DIAGNOSTIC TOOLSET PROGRAM CARD Version 13.3a 01/20/06 Press <ENTER>	Press “ENTER”
B *APPLICATION SELECT* 1: DIAGNOSIS 2 CUSTOMIZE 3: ECU REPROGRAM	Select “DIAGNOSIS”

(Continued next page)

Repair Procedure (Continued)

Zero Point Calibration

WHEN THIS SCREEN APPEARS: | **DO THIS:**

C

FUNCTION SELECT FOR NORTH AMERICA
1: OBD/MOBD
2 ENHANCED OBD II
3: CARB OBD II
4: BREAK–OUT BOX
5: NVH
6: AUTOPROBE
7: 02 RPM CHECK
8: SNAPSHOT REVIEW
9: SETUP
0: GAS ANALYSIS

- Select “OBD/MOBD”
- Press “ENTER”

D

VEHICLE SELECT

NEW VEHICLE

LAST VEHICLE

Select “NEW VEHICLE”

E

VEHICLE SELECT
NEW VEHICLE

Select Model Year

F

VEHICLE SELECT

Model Selection

** Select Appropriate Model

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Repair Procedure (Continued)

Zero Point Calibration (Continued)

	WHEN THIS SCREEN APPEARS:	DO THIS:
G	OBD/MOBD MENU 1: CODES (ALL) 2: ENGINE AND ECT 3: ABS / VSC 4: CCS 5: IMMOBILIZER 6: SRS AIRBAG	• Select “ABS/VSC” • Press “ENTER”
H	*Verify Connections*  Black DLC3 Cable (J1962 Cable) [YES] to continue	• Press “YES”
I	INITIALIZING CAN INTERFACE PLEASE WAIT	
J	* WARNING * This vehicle requires that the engine is idling to communicate w/ the ABS/TR(A)C/VSC ECU. Please ensure that the engine is idling. PRESS [ENTER]	Press “ENTER”

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Repair Procedure (Continued)

Zero Point Calibration (Continued)

	WHEN THIS SCREEN APPEARS:	DO THIS:
K	DIAGNOSTIC MENU ABS/VSC 1: DATA LIST 2: DTC INFO 3: ACTIVE TEST 4: SNAPSHOT 5: AIR BLEEDING 6: RESET MEMORY 7: SIGNAL CHECK 8: TEST MODE	• Select “RESET MEMORY” • Press “ENTER”
L	RESET MEMORY Reset the learning value in the ABS ECU memory to the initialized condition by this function. Do you want to start this function? PRESS [YES] or [NO]	Press “YES”
M	RESET MEMORY COMPLETED PRESS [ENTER]	Press “ENTER”
N	DIAGNOSTIC MENU ABS/VSC 1: DATA LIST 2: DTC INFO 3: ACTIVE TEST 4: SNAPSHOT 5: AIR BLEEDING 6: RESET MEMORY 7: SIGNAL CHECK 8: TEST MODE	• Select “SIGNAL CHECK” • Press “ENTER”

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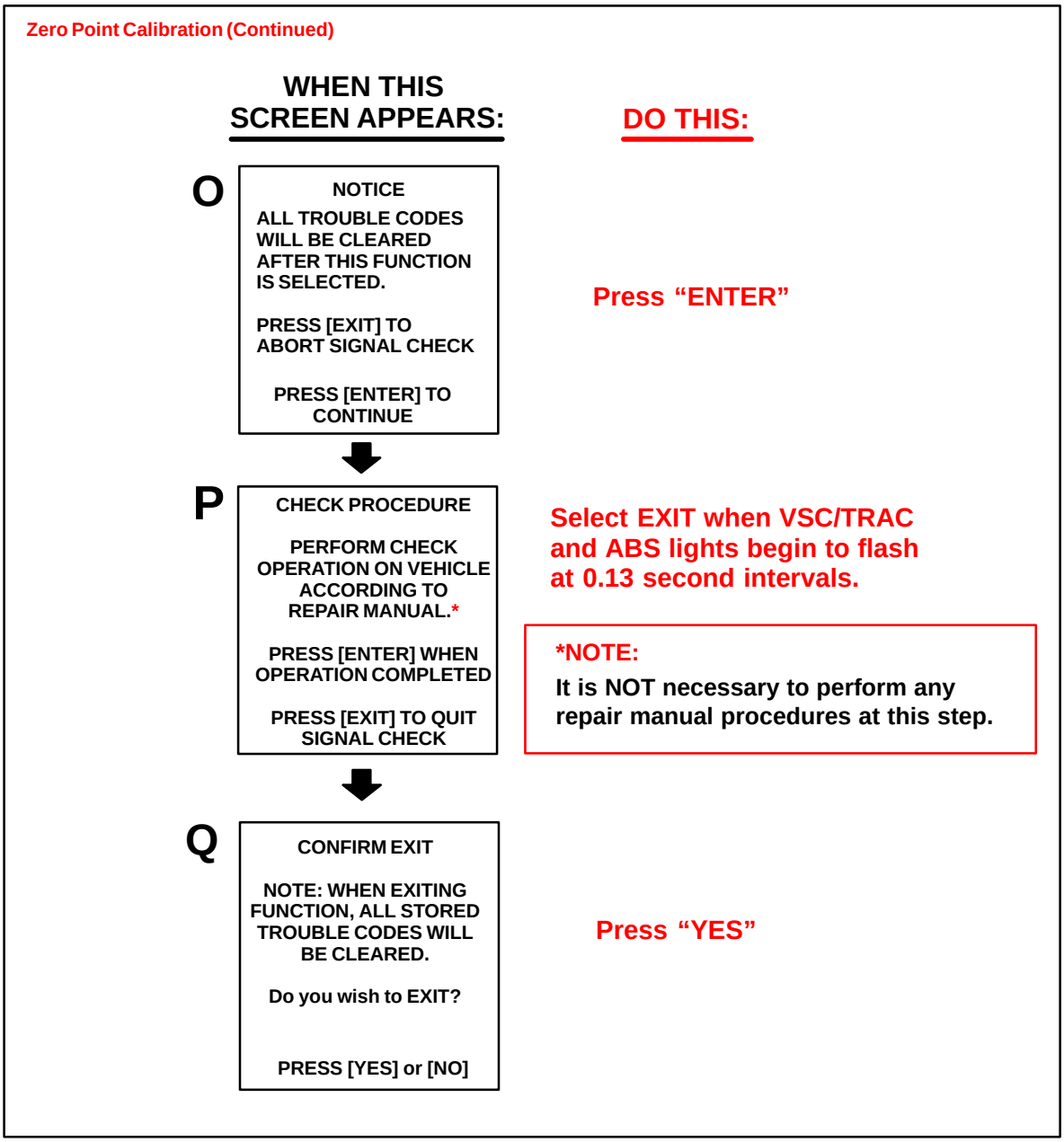
Repair Procedure (Continued)

Zero Point Calibration (Continued)



3. Drive the vehicle for **at least 5 minutes** to confirm Zero Point Calibration is complete.

NOTE:

If viewing Diagnostic Tester Data List after repair, the Steering Angle Sensor may remain at 1150 until the vehicle reaches 28 mph. This is a normal condition until the learned values of the steering angle have been achieved.

Calibration Procedure With SST

Zero Point Calibration Using SST 09843–18040

The following procedure may be used in the cases where a Diagnostic Tester is not available.

> **NOTE:**
> **While performing the Zero Point Calibration, do NOT tilt, move, or shake the vehicle. The vehicle must remain in a stationary condition throughout the entire process. Be sure to perform the procedure on a level surface with an inclination of less than 1%.**

1. If the vehicle is equipped with A/T, ensure that the shift lever is in the “P” range and the parking brake is applied. If the vehicle is equipped with a M/T, ensure that the parking brake is applied.
2. Turn the ignition switch ON.
3. Using the SST, repeat a cycle of short and open between terminals Ts and CG of DLC3 4 times or more within 8 seconds (refer to the specific vehicle EWD for TS and CG pin location in the DLC3).
   - **SST 09843–18040**
4. Verify that the VSC indicator light is lit indicating the recorded zero point is erased.
5. Turn the ignition switch OFF.
6. Be sure the terminals Ts and CG of DLC3 are disconnected.
7. Turn the ignition switch ON.
8. Check that the VSC warning light goes off about 15 seconds after the ignition switch is turned ON.
9. After ensuring that the VSC warning light remains OFF for 2 seconds, turn the ignition switch OFF.
10. Connect terminals Ts and CG of DLC3 using the SST.
    - **SST 09843–18040**
11. Turn the ignition switch ON.
12. After turning the ignition switch ON, check that the VSC warning light is lit for about 4 seconds and then starts quick blinking at 0.13 second intervals.
13. After ensuring the blinking of the VSC warning light for 2 seconds, turn the ignition switch OFF.
14. Remove the SST from terminals Ts and CG of DLC3.
15. Drive the vehicle for **at least 5 minutes** to confirm Zero Point Calibration is complete.

> **NOTE:**
> **If viewing Diagnostic Tester Data List after repair, the Steering Angle Sensor may remain at 1150 until the vehicle reaches 28 mph. This is a normal condition until the learned values of the steering angle have been achieved.**