



Technical Service BULLETIN

December 22, 2005

Title:

TIRE PRESSURE WARNING SYSTEM LIGHT ON

Models:

'04 – '05 Highlander

REVISED
BR006-05
BRAKES

TSB REVISION NOTICE:

- **December 4, 2006: The Old Part Identification column of the Parts Identification table has been updated.**

Previous versions of this TSB should be discarded.

Introduction On some 2004 – 2005 model year Highlander vehicles, the Low Tire Pressure Warning Light on the combination meter display may illuminate without a noticeable change in tire pressure. This condition may be caused by one of the following conditions:

- If the re-initialization of the Tire Pressure Warning System (TPWS) is NOT conducted correctly, the Low Tire Pressure Warning Light on the combination meter display may illuminate without a noticeable change in tire pressure. When performing service that requires tire rotation, tire replacement, or alignments, the Tire Pressure Warning System must be re-initialized using the procedures in this TSB.
- In rare instances, the TPWS operating logic may be sensitive to the various driving conditions under which a particular customer is operating his/her vehicle. For those cases where the system may be too sensitive, the operating logic has been changed in the Skid Control ECU to help improve this condition for that particular customer.

NOTE:

Most vehicles will require initialization of the TPWS only. Replace the actuator assembly only on vehicles where the customer's specific driving patterns cause the TPWS light to come on.

Applicable Vehicles

- **2004 – 2005** model year **Highlander** vehicles produced **BEFORE** the Production Change Effective VINs shown in the Production Change Information table in this TSB.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
BR5017	System Diagnosis and Initialization	0.7	44050-#####	87	74
896051	R & R Brake Actuator Assembly*	1.4			

* Only if the initialization procedures were performed according to this bulletin and the condition persists.

Applicable Warranty*:

This repair is covered under the Toyota Comprehensive 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 correction of a problem based upon a customer's specific complaint.



Production Change Information

MODEL	ENGINE	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE VIN
Highlander	4-cyl	2WD	JTE*D21A#50124176
		4WD	JTE*D21A#50037893
	V6	2WD	JTE*P21A#50076702
		4WD	JTE*P21A#50115375

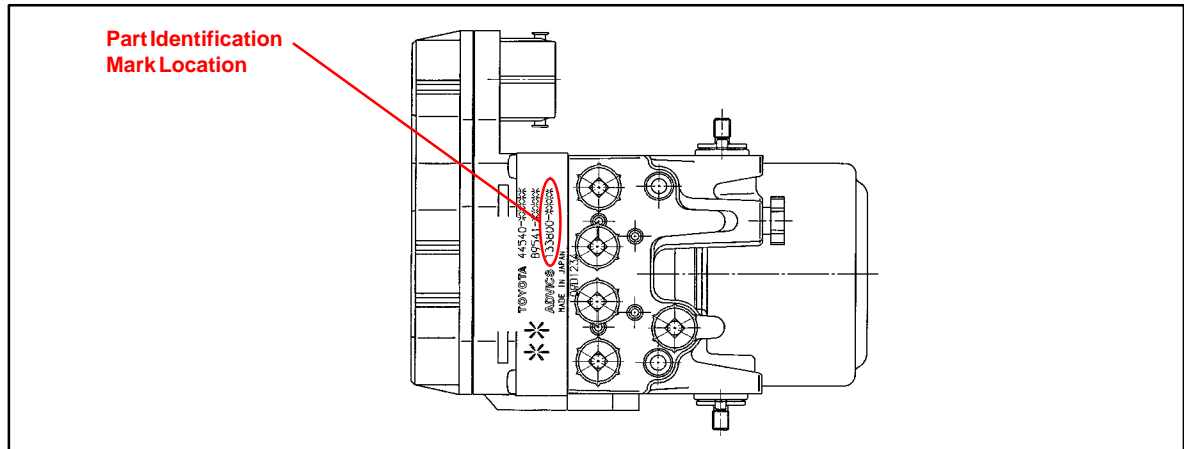
Parts Information

MODEL	PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
Highlander (2WD)	44050-48110	Same	Actuator Assembly, Brake	1
Highlander (4WD)	44050-48120			1

Parts Identification

To identify the correct actuator service part, refer to the new part identification mark number in the table below. To locate the part identification number on the part, refer to the illustration below.

MODEL	PART NUMBER	OLD PART IDENTIFICATION	NEW PART IDENTIFICATION	PART NAME
Highlander (2WD)	44050-48110	133800-7371 133800-7370	133800-7372	Actuator Assembly, Brake
Highlander (4WD)	44050-48120	133800-7381 133800-7380	133800-7382	



**System
Limitations****Tire Pressure Warning System (TPWS) Limitations:**

The 2004 – 2005 Highlander TPWS may not operate properly under the following conditions:

- Initialization was not performed correctly after replacing or rotating tires or wheels.
- The vehicle uses snow tires, compact spare tires, or snow chains.
- The tire inflation pressure is excessively higher than specified, or tire inflation pressure suddenly drops due to bursting or other cases.
- The vehicle is being driven on a slippery road surface, such as rough or frozen road.
- The vehicle speed is less than 31 mph (50 km/h) or more than 62 mph (100 km/h), and the driving duration is less than about 30 minutes.
- The tires currently on the car differ in tread pattern or manufacturer.
- The tires are not the specified size.
- The tread wear is very different among the installed tires.
- The pressure of two or more tires drops at the same time.
- Rapid acceleration/deceleration or sharp turns is continued over a prolonged period.
- The outside temperature is below 32°F (0°C) or above 104°F (40°C).
- Aftermarket (non-factory) wheels and tires are installed.

If any of these conditions exist, the TPWS may not properly function and the indicator light may give a false indication.

Most Common Conditions for TPWS Light to Come “On” (listed in order):

1. Improper or incomplete initialization (most common).
2. Tire pressure loss — valve stem loose or improperly seated.
3. Wire harness damage or poor connection.
4. Skid Control ECU — the TPWS monitor is integrated into the Skid Control ECU, which is attached to the brake actuator assembly (rare condition).
5. Ambient Temperature Sensor — can be verified if there is no change in the displayed value when the vehicle is moved to different locations with different temperatures (for example, from cold weather parking lot to warmer repair shop).

- Initialization Conditions** The Tire Pressure Warning light can illuminate requiring initialization if any of the following changes occur:
- When air pressure is adjusted up or down.
 - When the tires are rotated.
 - When one or more tires or wheels are replaced.
 - When an alignment is performed.

NOTE:

Depending on the vehicle owner's driving patterns, habits, and trip duration, initialization of the TPWS may take a significant amount of driving, with several trips, to complete initialization. For this reason, the initialization should be completed by the customer during normal driving conditions.

Repair Procedure

1. Perform a preliminary check for the following:
 - Snow tires, spare tires, or snow chains installed
 - Tire tread, manufacturer, or model differ
 - Tread wear is very different among tires
 - Tire trauma such as shifted belts or impact damage
 - Aftermarket wheels or tires installed

If during the preliminary check one or more of these items are detected, then correct as necessary.
2. Confirm tire pressure (cold pressure) and if necessary, adjust tire pressure to exact specification.
3. Complete the re-initialization procedure. Refer to step 3B of the "Reset/Re-initialization Procedure" section of this TSB.
4. Return vehicle to customer.
5. If the vehicle comes back to the dealership with the same concern, replace the brake actuator. Refer to the Technical Information System (TIS), 2004 or 2005 model year Highlander Repair Manual: *Brake: Brake Actuator Assy: Replacement*.
6. Initialize the TPWS using the "Reset/Re-Initialization Procedure" in this TSB.
7. Perform zero point calibration. Refer to TSB No. BR001-04, "Zero Point Calibration."

**Reset/
Re-initialization
Procedure**

Following are procedures for a simple reset, such as when the light comes on due to low tire pressure, and for a re-initialization, necessary when tires are rotated or replaced.

1. Confirm that the tire pressure is set to the exact specifications printed on the label in the driver's door jamb.
2. With the vehicle parked, turn the ignition switch to the "ON" position.
3. Determine if the system must be reset or re-initialized.

Reset — The system requires "reset" after the light is "ON" and air pressures have been adjusted or a flat repair was performed and the same tire has been reused. (If the tire was replaced, initialization must be performed.)

Re-initialization — The system requires "initializing" after tire, wheel or suspension component replacement, after alignment, or after rotating the tires.

- A. To **reset** the TPWS (does not require initialization), with the TPWS light ON, press the TPWS "SET" button, hold for 1 – 2 seconds until the TPWS light turns off, and then release the button.
 - This resets the tire pressure system monitor.
- B. To **re-initialize** the TPWS, such as after rotating, repairing, or replacing tires, suspension repairs, and/or alignment adjustments, press and hold the TPWS "SET" button until the TPWS light blinks 3 times in 1 second intervals. Release the "SET" button after the light completes 3 blinks.
 - This clears all memorized system data and starts the initialization process. After this procedure has been performed, it will be necessary to drive the vehicle to complete the initialization process.

NOTE:

- Depending on the vehicle owner's driving patterns, habits, and trip duration, full initialization of the TPWS may take a significant amount of driving, with several trips, to complete initialization. For this reason, the full initialization should be completed by the customer during normal driving conditions.
- The TPWS will monitor the tire pressure during the re-initialization process and will illuminate the warning light if a low pressure condition is found. The system will have optimum efficiency when the initialization is complete.