

**Toyota Motor Engineering &
Manufacturing North America, Inc.**

Vehicle Safety & Compliance
Liaison Office
Mail Code: S-104
19001 South Western Avenue
Torrance, CA 90501

October 10, 2012

Ms. Nancy Lummen Lewis
Associate Administrator for Enforcement
National Highway Traffic Safety Administration
Attn: Recall Management Division (NVS-215)
1200 New Jersey Ave, SE
Washington, D.C. 20590

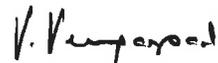
Re: Certain Toyota Vehicles Power Window Master Switch
Part 573, Defect Information Report

Dear Ms. Lewis:

In accordance with the requirements of the National Traffic and Motor Vehicle Safety Act of 1966 and 49 CFR Part 573, on behalf of Toyota Motor Corporation ["TMC"], we hereby submit the attached Defect Information Report concerning a voluntary safety recall of certain Toyota vehicles to address an issue with the Power Window Master Switch assembly.

Should you have any questions about this report, please contact me at (310) 468-8551.

Sincerely,



Vinnie Venugopal
General Manager
Toyota Motor Engineering & Manufacturing
North America, Inc.

Enclosures
Part 573, Defect Information Report

DEFECT INFORMATION REPORT

1. Vehicle Manufacturer Name:

Toyota Motor Corporation ["TMC"]

1, Toyota-cho, Toyota-city, Aichi-pref., 471-8571, Japan

Toyota Motor Manufacturing, Kentucky, Inc. ["TMMK"]

1001 Cherry Blossom Way Georgetown, KY, 40324

Toyota Motor Manufacturing Canada Inc. ["TMMC"]

1055 Fountain Street North, Cambridge, Ontario, Canada N3H 5K2

Toyota Motor Manufacturing, Indiana, Inc. ["TMMI"]

4000 Tulip Tree Dr., Princeton, IN, 47670-4000

Toyota Motor Manufacturing, Texas, Inc. ["TMMTX"]

1 Lone Star Pass San Antonio, Texas 78264-3413 USA

New United Motor Manufacturing, Inc. ["NUMMI"]

45500 Fremont Blvd., Fremont, CA, 94538

Toyota Motor Manufacturing Northern Kentucky, Inc. ["TMMNK"]

25 Atlantic Ave., Erlanger, Kentucky, 41018

Affiliated U.S. Sales Company

Toyota Motor Sales, USA, Inc. ["TMS"]

19001 South Western Avenue, Torrance, CA 90501

General Motors Corporation Global Headquarters ["GM"]

100 Renaissance Center Drive, PO. Box 100 Detroit, MI 48265

Manufacturer of Power Window Master Switch Assembly:

TRAM, Inc.

47200 Port Street Plymouth, Michigan 28170, U.S.A

Telephone: +1-734-254-8500

Country of Origin: USA

or

TOKAI RIKA CO., LTD.

3-260 Toyota, Oguchi-cho, Niwa-gun, Aichi-pref. 480-0195, Japan

Telephone: +81-587-95-5211

Country of Origin: Japan

2. Identification of Affected Vehicles:

Based on production records, we have determined the affected vehicle population as in the table below.

Make/ Car Line	Model Year	Manufac- turer	VIN		Production Period
			VDS	VIS	
Toyota/ Camry, Camry HV	2007 - 2009	TMC	B#46K	73012775 - 93177501	September 1, 2006 through December 19, 2008
		TMMK		7U001025 - 9U916091	
		TMMKN		7R001003 - 9R130839	
Toyota/ RAV4	2007 - 2008	TMC	##3#V	75006520 - 86089725	September 1, 2006 through December 19, 2008
	2009	TMMC		9W001048 - 9W002436	
Toyota/ Corolla	2009	TMC	B#40E	99017731 - 9J037667	November 23, 2007 through December 18, 2008
		TMMC		9C001043 - 9C171436	
		NUMMI		9Z001001 - 9Z150950	
Toyota/ Corolla Matrix	2009	TMMC	##40E	9C001017 - 9C171450	January 2, 2008 through December 18, 2008
Toyota/ Tundra	2007 - 2008	TMMI	##5#1	7S449764 - 8S524251	October 26, 2006 through December 22, 2008
		TMMTX		7X001009 - 9X085752	
Toyota/ Sequoia	2008 - 2009	TMMI	##6#A	8S000010 - 9S023773	November 13, 2007 through December 18, 2008
Toyota/ Highlander, Highlander HV	2008	TMC	##4#A	82000129 - 82108004	May 25, 2007 through July 31, 2008
Toyota/ Yaris	2007 - 2008	TMC	#T9#3	71079117 - 85218428	September 1, 2006 through July 31, 2008
Toyota/ Scion xB	2008 - 2009	TMC	KE50E	81000136 - 91077653	March 29, 2007 through July 31, 2008
Toyota/ Scion xD	2008 - 2009	TMC	KU104	8J000125 - 9J034568	June 12, 2007 through July 31, 2008

Pontiac/ Vibe	2009	NUMMI	S#67#	9Z400002 - 9Z471197	January 22, 2008 through December 19, 2008
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Note: Although the involved vehicles are within the above VIN range, not all vehicles in this range were sold in the U.S.

3. Total Number of Vehicles Potentially Affected:

Toyota Camry, Camry HV	: 1,054,999
Toyota RAV4	: 336,384
Toyota Corolla	: 270,902
Toyota Corolla Matrix	: 53,771
Toyota Tundra	: 337,126
Toyota Sequoia	: 38,491
Toyota Highlander, Highlander HV	: 158,479
Toyota Yaris	: 110,274
Scion xB	: 77,457
Scion xD	: 34,408
Pontiac Vibe	: 47,133
Total	: 2,519,424

4. Percentage of Vehicles Estimated to Actually Experience Malfunction:

Unknown

5. Description of Problem:

The sliding electrical contact module in the driver's side Power Window Master Switch (PWMS) may experience a "notchy" or sticking feeling during operation. This may be caused by an uneven application of the grease lubricant at the supplier. If the grease is not applied evenly, frequent usage of the switch and normal "arcing" of the contact module terminals may cause the grease lubricant to become carbonized and eventually result in the deterioration of the greases' lubricating properties. Consequently, an electrical contact point may prematurely wear, causing a notchy or sticking feeling during operation, and may result in the switch becoming inoperative.

If commercially available cleaning lubricants are applied to the switch to attempt to address the notchy or sticky feel, the switch assembly may overheat and melt. A melting switch may produce smoking and, potentially, lead to a fire.

6. Chronology of Principal Events:

On February 6, 2012, NHTSA opened a Preliminary Evaluation (PE12-002) regarding electrical fire originating in the driver's side door on certain MY2007 Toyota RAV4 and Camry vehicles.

Toyota had investigated this issue based on field information, as discussed below.

In September 2008, Toyota received a Field Technical Report (FTR) from the US market indicating an unusual smell coming from the PWMS and thermal damage on the PWMS. The PWMS was returned to the supplier for investigation and analysis. The sliding contact module inside the PWMS for the passenger side window was found to be carbonized, however, the root cause was not identified at this time. Because of the lack of other similar information received, Toyota continued monitoring the field information.

From May 2010, Toyota began sporadically receiving FTR's from the field concerning abnormal smell and/or smoke coming from the driver side door, especially near the PWMS. As explained in Toyota's response to the PE Information Request submitted to the agency in early April 2012, it investigated and analyzed the reports, examined the assembly process, analyzed returned parts, and undertook various testing of the PWMS.

When Toyota analyzed various field returned PWMS' which had thermal damage such as melting and burning, electrical arcing and wearing of the contacts due to high, repeated operation was observed. Carbonized material was also confirmed in the contact module which could create a short circuit and could lead to increased heat and resultant melting of the PWMS. In addition, chemicals containing silicone or ester, which are found in common lubricants and cleaning products, were present in the majority of the analyzed parts. Neither silicone nor ester is used in the manufacturing process for the subject PWMS.

Toyota conducted re-creation testing (switch cycling duration testing under various conditions) to confirm whether the introduction of silicone or ester is needed to create a short circuit in the PWMS. When testing using unused parts without either chemical, the first malfunction observed was a condition in which the switch began to stick. After repeated cycling of the sticky switch, the switch became inoperable and no short circuit was observed after the inoperative condition was achieved. However, when a silicon-based chemical agent spray (e.g. CRC) was applied after the observation of the sticky condition and the cycling testing was continued, heat in the contact area increased to the point where melting was observed on the switch module. Toyota believed that lubricant may be introduced in an effort to alleviate a sticking switch in the field.

In addition to the above investigation, Toyota examined the manufacturing process and history. It was confirmed that the grease application process in one of three production lines for the contact module was changed from a spray-type application to a squeeze-type application

between August 2006 and June 2008. In examining the application process, it was found that, in the squeeze-type grease application, the grease may be applied unevenly on the contact module terminals. In this condition, frequent usage of the switch and normal arcing of the contact points may cause the grease to become carbonized and the contact points may prematurely wear, causing a sticky condition. If the switch is continuously operated with the sticky condition, it could result in the switch becoming inoperative.

In August 2012, based on results of the comprehensive investigations described above, Toyota concluded that the thermal events on the PWMS randomly occurring in the field were caused by the application of lubricant to the PWMS in an attempt to alleviate a sticking switch attributed to the uneven grease application. Although a thermal event is caused by external factors, such as lubricant use, in order to eliminate the possibility of the thermal event in the PWMS, Toyota decided to conduct a Customer Satisfaction Campaign on vehicles equipped with the PWMS with the contact module produced in the specific production line and period noted above.

However, after discussion and consultation with the agency, on October 4, Toyota decided to conduct a voluntary safety recall campaign to address this issue.

7. Description of Corrective Repair Action:

All known owners of the subject vehicles will be notified by first class mail to return their vehicles to a Toyota or GM dealer for the inspection of the PWMS and application of specialized grease that inhibits heat build-up. The circuit board in the PWMS may be replaced with a new one, if the notchy or sticking feeling is observed during the inspection.

Reimbursement Plan for pre-notification remedies for Toyota Vehicles

The owner letter will instruct vehicle owners who have paid to have this condition remedied prior to this campaign to seek reimbursement pursuant to Toyota's General Reimbursement Plan.

Reimbursement Plan for pre-notification remedies for General Motors Vehicles (Pontiac Vibe)

Pursuant to 577.11(e), General Motors will provide reimbursement to owners for repairs completed on or before ten days after GM mails owner letters, pursuant to the plan submitted on May 12, 2011.

8. Recall Schedule:

Notifications to the owners will be sent starting in late October 2012 and be completed by TBD. Copies of the owner notification and dealer instructions will be submitted as soon as they are available.

9. Distributor/Dealer Notification Schedule:

Notifications to distributors/dealers will be sent on TBD.

Copies of dealer communications will be submitted as they are issued.