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By Recall Management Division at 9:04 am, Nov 09, 2011

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

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

November 9, 2011

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 and Lexus Vehicle Crankshaft Pulleys  
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 and Lexus vehicles to address an issue with the crankshaft pulley.

Should you have any questions about this report, please contact me at (502) 867-6027.

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-ken, 471-8571, Japan

Toyota Motor Manufacturing Canada Inc. ["TMMC"]  
1055 Fountain Street North, Cambridge, Ontario, Canada N3H 5K2

Toyota Motor Manufacturing, Kentucky, Inc. ["TMMK"]  
1001 Cherry Blossom Way Georgetown, KY, 40324

Toyota Motor Manufacturing, Indiana, Inc. ["TMMI"]  
4000 South Tulip Tree Drive, Princeton, IN 47670-4000

Affiliated U.S. Sales Company

Toyota Motor Sales, USA, Inc. ["TMS"]  
19001 South Western Avenue, Torrance, CA 90509

Manufacturer of Crankshaft pulley

Eagle-Picher Automotive  
651 Beck Street, Jonesville, Michigan 49250  
Telephone: 517-849-9918

2. Identification of Affected Vehicles:

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

Make	Car Line	Model Year	Manufacturer	VIN		Production Period
				VDS	VIS	
Toyota	Avalon	2004	TMMK	BF28B	4U375678 - 4U391317	Jun. 1, 2004 - Dec. 20, 2004
	Camry	2004 - 2005	TMC TMMK	B#3#K	40023312 - 50161894 4U033135 - 5U606955	Jun. 1, 2004 - Mar. 31, 2005
	Highlander	2004 - 2005	TMC	#P21A	40037844 - 50117974	Jun. 1, 2004 - Mar. 31, 2005
	Highlander HV	2006	TMC	#W21A	60001003 - 60001524	Sep. 23, 2004 - Mar. 31, 2005
	Sienna	2004 - 2005	TMMI	#A2#C	4S022711 - 5S287017	Jun. 1, 2004 - Jan. 31, 2005

Make	Car Line	Model Year	Manufacturer	VIN		Production Period
				VDS	VIS	
Toyota	Camry Solara	2004 - 2005	TMMK	#A3#P	4U032975 - 5U061645	Jun. 1, 2004 - Jan. 31, 2005
Lexus	ES330	2004 - 2005	TMC	BA30G	40017496 - 50024457 45049034 - 55115629	Jun. 1, 2004 - Mar. 31, 2005
	RX330	2004 - 2005	TMMC TMC	#A31U	4C014998 - 5C059939 40040194 - 50093205	Jun. 1, 2004 - Mar. 31, 2005
	RX400h	2006	TMC	HW31U	60001035 - 60005158	Sep. 28, 2004 - Mar. 31, 2005

Note: Although the involved vehicles are within the above VIN range, not all vehicles in this range were sold in the U.S.

Only vehicles equipped with 1MZ-FE or 3MZ-FE engines produced within the range above are affected. Vehicles not equipped with the subject crankshaft pulley are not affected. Furthermore, no other vehicle models are equipped with the same crankshaft pulley produced by the above supplier.

3. Total Number of Vehicles Potentially Affected:

Toyota Avalon:	15,139
Toyota Camry:	44,544
Toyota Highlander:	88,429
Toyota Highlander HV:	274
Toyota Sienna:	110,862
Toyota Camry Solara:	23,961
Lexus ES330:	61,149
Lexus RX330:	72,995
Lexus RX400h:	2,973
Total:	420,326

4. Percentage of Vehicles Estimated to Actually Contain the Defect:

Unknown

5. Description of Problem:

For the subject vehicles equipped with the 1MZ-FE or 3MZ-FE engine, the amount of the adhesive agent applied between the outer ring and the torsional rubber damper (inner ring) in the crankshaft pulley may be inadequate. If the adhesive is insufficient, there is a possibility that the outer ring may become misaligned and it may not properly rotate with the inner ring, causing noise and/or illumination of the discharge warning light. In some cases, the belt for the power steering pump may become detached from the pulley which could result in a sudden increase in steering effort. A sudden increase in steering effort could increase the risk of a crash.

6. Chronology of Principal Events:

October 2007 – February 2010

In October 2007, Toyota received a field technical report from the Japan market indicating a heavy steering feel in a Japanese domestic vehicle. The dealer confirmed noise and a heavy steering feeling, and also found that the belt for the power steering pump was detached from the crankshaft pulley. In addition, the position of the outer ring of the pulley was shifted relative to the inner ring. Toyota received the failed parts and began an investigation.

Toyota later received another field technical report from the Japan market indicating noise, and also one from the U.S. market indicating illumination of the discharge warning light likely caused by separation of the outer ring of the crankshaft pulley.

After investigation of the parts received from the Japan market, it was presumed that application of the adhesive agent between the inner and outer rings during assembly was inadequate. Toyota continued to monitor the field information and investigate returned parts.

March 2010 – November 2010

Toyota received additional field technical reports concerning a heavy steering feeling. Crankshaft pulleys for the subject vehicles were produced by both Japanese and U.S. suppliers, and all of the failed pulleys were made by the U.S. supplier. Therefore, Toyota's investigation focused on this supplier. It was found that the supplier changed its work shift from two to three per day because of increased production between June 2004 and December 2004. Toyota suspected that cleaning of the nozzle of the machine that applied the adhesive material may have been inadequate in this production period and possibly resulted in insufficient adhesive application. Because pulley failures occurred on vehicles produced between September 2004 and January 2005, which is consistent with the period of the increased production at the supplier, Toyota started to collect the crankshaft pulleys randomly from in-use vehicles to conduct further investigation.

Toyota also started to conduct replication tests with the pulleys made by the Japanese supplier (U.S. made parts were not available because the supplier's factory had closed).

#### December 2010 – November 2011

Toyota first collected 64 crankshaft pulleys from the field but found no abnormalities in these parts. Toyota continued to collect pulleys, and replication tests were ongoing. It collected a total of 289 pulleys, and confirmed that the amount of the adhesive agent was insufficient on three pulleys produced between June 2004 and December 2004. With regard to testing, pulleys without any adhesive were specially produced by the Japanese supplier for testing to investigate the potential effect of the adhesive. However, the problem could not be duplicated with these specially made pulleys. Toyota then conducted replication testing with pulleys made by the U.S. supplier that were received from the field and reworked. Based on the replication testing, it was found that, if the amount of adhesive is insufficient in the pulleys produced by the U.S. supplier, there is a possibility that the outer ring may become misaligned and may not properly rotate with the inner ring, causing noise and/or illumination of the discharge warning light. It was also found that, in some cases, the belt for the power steering pump may become detached from the pulley which could result in a sudden increase in steering effort.

#### November 3, 2011

Based on the results of the investigation described above, Toyota decided to conduct a voluntary recall campaign in the U.S., Canada, Japan, Europe and other countries.

#### 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 Lexus dealer. The dealer will check the crankshaft pulley to identify whether it was produced by the U.S. supplier. If so, the dealer will replace the pulley with a new one at no charge.

#### Reimbursement Plan for pre-notification remedies

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.

#### 8. Recall Schedule:

Notifications to the owners will begin in early January, 2012 and conclude in late March, 2012.

A copy of the draft owner notification letter will be submitted for ODI review as soon as it is available.

9. Distributor/Dealer Notification Schedule:

Toyota's notifications to distributors/dealers will be sent in late December, 2011.  
Copies of dealer communications will be submitted as they are issued.