

August 28, 2019

DEFECT INFORMATION REPORT

1. Vehicle Manufacturer Name:

Toyota Motor Corporation [“TMC”]
1, Toyota-cho, Toyota-city, Aichi-pref., 471-8571, Japan

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

New United Motor Manufacturing, Inc. [“NUMMI”]
45500 Fremont Boulevard, Fremont, CA 94538-6368

Affiliated U.S. Sales Company

Toyota Motor North America, Inc. [“TMNA”]
6565 Headquarters Drive, Plano, TX 75024

General Motors Corporation Global Headquarters [“GM”]
100 Renaissance Center Drive, P. O. Box 100 Detroit, MI 48265

Manufacturer of Front Passenger Air Bag Assembly:

Joyson Safety systems
2025 Harmon Road, Auburn Hills, MI 48326
Phone: 248-373-8040

Country of Origin: Mexico

Joyson Safety Systems Japan K. K.
2-3-14 Higashishinagawa Shinagawa-ku, Tokyo Japan 140-0002
Phone: +81-3-6455-8413

Country of Origin: Japan

2. Identification of Involved Vehicles:

Make/ Car Line	Model Year	Manufacturer	Production Period
Toyota/ Corolla	2003 - 2008	TMC, TMMC, NUMMI	January 4, 2002 through July 20, 2007
Toyota/ Corolla Matrix	2005 - 2008	TMMC	April 25, 2004 through December 18, 2007
Pontiac/ Vibe	2005 - 2008	NUMMI	April 26, 2004 through January 2, 2008

- NOTE: (1) Although the involved vehicles are within the above production period, not all vehicles in this range were sold in the U.S.
- (2) This issue only affects the aforementioned Toyota and Pontiac vehicles equipped with specific Takata front passenger air bag assemblies, as described below, which contain an alternative air bag inflator produced by a different supplier and that were used as a replacement under a prior recall.

Applicability	Part Number	Part Name	Component Description
MY2005-2008 Toyota Corolla Matrix	04005-22801 04005-22901	Air Bag Assy Kit, Instrument Panel Passenger L/Door	Passenger Air Bag Assembly
MY2003-2004 Toyota Corolla	04008-10212		
MY2005-2008 Toyota Corolla	04008-10312	Inflator Assy Kit, Instrument Panel Air Bag	Passenger Air Bag Inflator
MY2005-2008 Pontiac Vibe	84103467	Module ASM-I/P Air Bag Inflator	Passenger Air Bag Assembly

3. Total Number of Vehicles Potentially Involved:

Toyota Corolla : Approx. 14,000
 Toyota Corolla Matrix : Approx. 121,000
 Pontiac Vibe : Approx. 84,000
 Total : Approx. 219,000

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

Unknown. Toyota is unable to provide an estimate of the percentage of vehicles to actually contain the defect. Whether the issue in each case will lead to damage of the air bag or bag plate in the air bag assembly during the deployment of air bag, creating an unreasonable risk to safety, depends on variation of the installation condition of the folded air bag and each vehicle's operating environment.

5. Description of Problem:

The subject vehicles are equipped with a front passenger air bag assembly containing an inflator, manufactured by an alternative supplier, installed as a replacement under a prior recall. There is a possibility that the air bag may not unfold as designed during inflation under high temperature conditions, resulting in air bag internal pressure rising differently than expected. Under such conditions, a portion of the air bag material could be torn during deployment, or the bag plate (which mounts the air bag to the air bag assembly case) could be damaged. In either instance, such damage during deployment could cause the air bag not to properly inflate, and this could increase the risk of occupant injury in the event of a crash.

6. Chronology of Principal Events:

January 2019 – March 2019

The supplier of the air bag assembly conducted quality confirmation testing of the subject front passenger air bag assembly which was newly adopted as a service part. This air bag assembly is of the same design as a remedy part used for previous Takata recalls, but the newly adopted service part was produced at a different assembly facility. During some of the tests, a tear of the air bag fabric or separation of bolts from the bag plate occurred. Toyota was notified by the supplier and requested them to initiate an investigation, including confirming the details of the initial test parts and testing conditions. The supplier conducted deployment tests on additional service parts and confirmed similar failures on some of the assemblies.

April 2019 – Mid-August 2019

Because the observed damage condition did not occur during the development testing of the recall remedy air bag assembly produced at a different facility than the new service part, Toyota collected in-stock completed air bag assemblies for the recall remedy and investigated to see if there were any differences between the recall remedy part and the newly adopted service part. No air bag folding differences or concerns were identified, but variation of the installed angle (tilt) of the folded air bag was observed. The supplier conducted replication testing with air bag assemblies containing the alternative inflator and the folded air bag installed with a large angle (tilt). In this condition, air bag tear or bag plate bolt separation occurred.

Based on the supplier's investigation of the air bag folding and assembly processes, variation of the installed angle (tilt) of the folded air bag could occur on both the recall remedy part and the new service part; therefore, the supplier initiated an investigation of the output pressure of the inflator. It was found that the output pressure of the alternative inflator, when tested at high

temperature, was different than the original Takata inflator at a point immediately after the ignition. The supplier began investigating the possible cause of the difference in output pressure between the alternative inflator and the original Takata inflator. It was found that the setup of the second stage ignition timing during the development testing of the alternative inflator was different from design specification of the ignition timing for an actual vehicle. For a vehicle, first and second stages are ignited simultaneously, but in development testing the second stage was ignited with a certain delay.

In parallel, to investigate the mechanism of the damage, testing was done using air bag assemblies containing a folded air bag installed with a large tilt angle, and simultaneously igniting the first and second stages of the alternative inflator. In this testing, it was found that the protector cloth, which holds the folded air bag in place prior to assembly installation to the vehicle, could be pinched between the assembly case and the air bag fabric, at a point immediately after the ignition, causing the air bag unfolding to be delayed and potentially resulting in air bag internal pressure rising differently than expected. Under such conditions, a portion of the air bag material could be torn during deployment, or the bag plate (which mounts the air bag to the air bag assembly case) could be damaged. In either instance, such damage during deployment could cause the air bag not to properly inflate, and this could increase the risk of occupant injury in the event of a crash.

August 22, 2019

Based on the results of the above investigation, Toyota decided to conduct a voluntary safety recall campaign.

As of August 20, 2019, based on a diligent review of records, Toyota's best engineering judgment is that there are no Toyota Field Technical Reports or warranty claims that have been received from U.S. sources that relate to this condition and which were considered in the decision to submit this report.

7. Description of Corrective Repair Action:

All known owners of the affected Toyota vehicles will be notified by first class mail to return their vehicles to a Toyota dealer. Dealers will replace the front passenger air bag assembly with an improved one.

General Motors will notify NHTSA separately of its repair and notification schedule and its campaign number concerning the Pontiac Vibe.

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.

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

Pursuant to 49 C.F.R. § 577.11, GM will reimburse owners for repairs according to the plan submitted on May 17, 2019

8. Recall Schedule:

Notifications to owners of the affected vehicles will occur by the end of October, 2019. A copy of the draft owner notification letter will be submitted as soon as available.

9. Distributor/Dealer Notification Schedule:

Notifications to distributors/dealers were sent on August 28, 2019. Copies of dealer communications will be submitted as they are issued.

10. Manufacturer's Campaign Number:

K1Q [Interim]

K0Q [Final]