

August 6, 2021

DEFECT INFORMATION REPORT

1. Vehicle Manufacturer Name:

Mazda de Mexico Vehicle Operation
Av. Hiroshima 1000, Complejo Industrial Salamanca, C.P.
36875, Salamanca, Gto

Affiliated U.S. Sales Company:

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

Manufacturer of Fuel Pump Assembly

DENSO CORPORATION
1-1, Showa-cho, Kariya-city, Aichi-pref., 448-8661, Japan
Phone: +81-566-25-5511

DENSO International America, Inc.
24777 Denso Drive, Southfield, Michigan 48086 U.S.A.
Phone: +1-248-350-7500

Country of Origin: Japan and U.S.A.

2. Identification of Involved Vehicles and Affected Components:

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

Make/Car Line	Model Year	Manufacturer	Production Period
Toyota / Yaris Hatchback, Yaris Sedan, Yaris R	2019-2020	Mazda de Mexico Vehicle Operation	October 4, 2018 through February 6, 2020

Applicability	Part Number	Part Name	Component Description
MY2019-2020 Toyota Yaris Hatchback, Yaris Sedan, Yaris R	23221-WB002	Low Pressure Fuel Pump	Fuel Pump
MY2019-2020 Toyota Yaris Hatchback, Yaris Sedan, Yaris R	77020-WB001	Fuel Suction w/Pump & Gage Tube Assy	Fuel Pump Assembly

Note: (1) Although the involved vehicles are within the above production period range, not all vehicles in this range were sold in the U.S.

(2) Based on Toyota's current understanding of the condition from Mazda, this recall applies to certain vehicles with specific low-pressure fuel pumps supplied by Denso, containing impellers produced during specific periods under specific circumstances. These vehicles contain fuel pumps that were produced with impellers of lower density and contain a pump impeller that was exposed to production solvent drying for longer periods of time, which may deform when exposed to higher levels of ambient environmental temperatures. Vehicles with fuel pumps that were not produced under the aforementioned conditions are not included at this time.

3. Total Number of Vehicles Potentially Involved:

Toyota Yaris Hatchback, Yaris Sedan, Yaris R: 31,307

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 a vehicle stall while driving at higher speeds depends on many variables, such as the specific production condition of fuel pump impeller and vehicle operating conditions such as the level of ambient environmental temperatures.

5. Description of Problem:

The subject vehicles are equipped with a low-pressure fuel pump, located in the fuel tank, that supplies fuel pressure to the fuel injection system. These fuel pumps may include impellers which have been manufactured with lower density. If these impellers were exposed to production solvent drying for longer periods of time and higher levels of ambient environmental temperatures, higher levels of surface cracking may occur. In this condition, excessive fuel absorption may occur, resulting in increased impeller deformation. In some cases, the impeller may deform to a point that creates sufficient interference with the fuel pump body to cause the fuel pump to become inoperative. An inoperative fuel pump due to these conditions could result in illumination of check engine and master warning indicators, rough engine running, engine no start and/or vehicle stall while driving

at low speed. However, in rare instances, vehicle stall could occur while driving at higher speeds, increasing the risk of a crash.

6. Chronology of Principal Events:

March – November 2020:

Mazda, which is responsible for the vehicle's design and manufacture, began an investigation into low-pressure fuel pump failures in the field. (Although the supplier was Denso, it was later learned that the fuel pump design was different than those in other Toyota models.) Toyota did not have access to the design information; therefore, to support Mazda's investigation, at the end of March, Toyota began providing Mazda with fuel pumps recovered from the field. Initially, three recovered fuel pumps were sent to Mazda.

Mazda reported that, for one of the fuel pumps it had received, the impeller was deforming due to low material density and extended drying time of solvent used in testing. Mazda also hypothesized that variation in field usage, such as environmental temperature in different regions and fuel type used by customers, could be additional contributors to impeller deformation.

Mazda then investigated nine additional fuel pumps that had been recovered from the field. Eight of these pumps had impeller deformation, while the ninth pump was contaminated by outside influences, and its failure was unrelated to impeller deformation.

Later, Mazda found four additional fuel pumps with impeller deformation. Throughout this time, Toyota continued to recover field parts to support Mazda's investigation.

December 2020 – July 2021:

Based on the recovered field parts and other investigation actions conducted by Mazda, Mazda reported that, for the fuel pumps in the subject vehicles, exposure to higher environmental temperatures appeared to be a factor. Based on this information, Mazda considered the temperature exposure for the subject vehicles in different markets and continued to investigate the specifics of how this factor, when combined with the other factors that had been previously identified as relevant (lower density impellers and longer exposure to solvent drying) could lead to sufficient interference between the impeller and the fuel pump body to cause the fuel pump to become inoperative. Denso conducted heat cycle testing to understand how environmental temperature influenced impeller deformation. Test results demonstrated that impeller deformation accelerates with higher temperature. In addition, to support Mazda's further investigation, Toyota provided field data to Mazda for different North American markets.

August 4, 2021:

Based on the investigation by Mazda, it was determined that, if these impellers, which were manufactured with lower density, were exposed to production solvent drying for longer periods of time and higher levels of ambient environmental temperatures, higher levels of surface cracking may occur. In this condition, excessive fuel absorption may occur, resulting in increased impeller deformation. In some cases, the impeller may deform to a point that creates sufficient interference with the fuel pump body to cause the fuel pump to become inoperative. An inoperative fuel pump due to these conditions could result in illumination of check engine and master warning indicators, rough engine running, engine

no start and/or vehicle stall while driving at low speed. However, in rare instances, vehicle stall could occur while driving at higher speeds, increasing the risk of a crash.

As of July 29, 2021, Toyota's best engineering judgment is that there are a total of 123 Field Technical Reports, 37 of which were confirmed (received between March 13, 2020 and July 29, 2021), and 1,432 warranty claims, 62 of which were confirmed (received between April 15, 2019 and July 29, 2021), that have been received from U.S. sources that relate or may relate to the subject fuel pump failures. The majority of reports and claims were for illumination of check engine and master warning indicators and engine no start cases.

7. Description of Corrective Repair Action:

For all involved vehicles, Toyota dealers will replace the low-pressure fuel pump assembly with an improved one.

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 owners of the affected vehicles will occur by October 5, 2021. A copy of the draft owner notification will be submitted as soon as it is available.

9. Distributor/Dealer Notification Schedule:

Notifications to distributors/dealers will be sent on August 6, 2021. Copies of dealer communications will be submitted as they are issued.

10. Manufacturer's Campaign Number:

[Interim / Remedy] 21TB05 / 21TA05