

21V-xyz
BMW Part 573 Report
High-Pressure Fuel Pump
Part 573.6(c)(6) – Chronology
29 Jul 2021

In early 2019, an increasing number of high-pressure fuel pump warranty claims were noticed in certain vehicles equipped with Diesel engines in a non-US market. An engineering review was initiated. Warranty claims and other information from the field was reviewed. Fuel pump build level configurations were examined based upon field information and involved vehicle production dates.

Between January and April, preliminary analyses pointed to issues in a non-US market involving fuel quality. Additionally, it was suggested that the issue could primarily occur during engine start, or, could manifest as a short-term interruption of fuel supply to the engine and a reduction in engine performance.

Further analyses involving other potentially affected vehicles and fuel pump build level configurations were analyzed. Factors such as fuel quality, operating temperatures, seasonal influences (ambient temperature / relative humidity), and other parameters were reviewed to assess possible effects on pump performance. Meetings and reviews with the fuel pump supplier occurred.

Between May and July, analyses of returned parts were able to be performed. Initial indications pointed toward variations in fuel quality, but had yet to be confirmed. Tests were performed at the supplier in an attempt to reconstruct pump field performance and identify a root cause. Further analyses involving big data were performed.

In the second half of 2019, meetings occurred with the Korean Authority KATRI. Further analyses were conducted. Discussions involving various vehicle models and potential actions were explored.

Between January and June 2020, the big data analysis did not point to a specific root cause. Fuel pump testing continued. Further analysis indicated that most cases occurred during engine start-up, or while idling, or in a partial-load operating range, and accompanied by a warning lamp.

In the second-half of 2020, further analyses pointed to pump build level configuration and fuel quality as factors affecting pump performance, in particular, fuel flow concentration and rate, temperature, and pressure. Fuel pump design changes were explored and tested to help identify root cause when compared to existing and prior pump designs and performance. Additional discussions with KATRI occurred, further analyses were planned, and follow-up discussions with KATRI were set to occur in early 2021.

In early 2021, it was shown that the valve lifter of a certain pump build level configuration has a higher tendency to be affected due to the use of biodiesel aging products and low viscosity fuel. Additional factors such as the pump's roll and cam profile were thought to contribute to performance degradation and unwanted pump wear for this build level configuration.

In mid-2021, further analyses and testing were performed, and discussions with the supplier occurred, to finalize and ensure that all analyses and test results were confirmed and accurately identified a root cause.

Vehicle assembly, parts supplier, and dealer service information was reviewed to determine the number and production dates of potentially affected vehicles.

On July 22, 2021, BMW decided to conduct a voluntary recall.

BMW has not received any reports, nor is otherwise aware, of any accidents or injuries related to this issue.