



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 10-034
Date Opened: 08/26/2010
Investigator: Kerrin Bressant
Approver: Frank Borris
Subject: High Pressure Fuel Pump Failure (HPFP)

Date Closed: 02/08/2011
Reviewer: Jeff Quandt

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: VOLKSWAGEN OF AMERICA, INC
Products: 2009-2010 Volkswagen/Audi Jetta/Golf/A3 TDI Clean Diesel
Population: 97,272

Problem Description: HPFP failure causes contamination of the fuel system with debris from pump wear, which results in rough engine, loss of power and possible engine stall.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	52	113	160**
Crashes/Fires:	1	0	1
Injury Incidents:	0	0	0
Fatality Incidents:	0	0	0
Other*:	0	154	154

*Description of Other: HPFP warranty claims related to the alleged defect.

** Count indicates duplicate reports received by ODI and manufacturer.

ACTION / SUMMARY INFORMATION

Action: This Preliminary Evaluation has been upgraded to an Engineering Analysis (EA11-003).

Summary:

The Office of Defects Investigation (ODI) and Volkswagen (VW) have received a total of 160 complaints and field reports alleging incidents of engine stall and/or loss of power that appear to be related to high pressure fuel pump (HPFP) failures in certain model year (MY) 2009 through 2010 Volkswagen Jetta and MY 2010 Volkswagen Golf and Audi A3 vehicles equipped with TDI clean diesel engines. Approximately half of the reports indicate that the failure resulted in an engine stall incident, with many of these alleging stall incidents at highway speeds in traffic with no restart. There has been one minor crash alleged to have resulted from HPFP failure in the subject vehicles.

In response to ODI's information request for PE10-034, VW indicated that it had "found no defect related to motor vehicle safety with relation to the TDI Clean Diesel fuel system at issue in this investigation" and attributed problems with HPFP failure to operation with gasoline contaminated diesel fuel. Volkswagen stated that "even a small amount of gasoline in the diesel fuel may disrupt the necessary lubrication required and may cause the HPFP to fail." In response to concerns that fuel contamination was the major cause of HPFP and related fuel system failures, VW issued a Technical Service Bulletin in May 2010 (VW TB V011011 2023624 and Audi TB A011008 2023360-1), with instructions to inspect the diesel fuel for vehicles requiring fuel system service that have symptoms associated with HPFP failure. The bulletin states that "fuel system damage incurred by use of fuel not complying to ASTM-D-975 Grade 2 S15 (B5 or less biodiesel content) standards will not be covered under warranty."

Volkswagen also provided information about 121 mis-fueling incidents reportedly acknowledged by consumers or dealers and test results for about 50 diesel fuel samples taken from complaint vehicles in late-August through early-October 2010. The mis-fueling incidents include about 20 reports involving incorrect fueling by dealer sales or service personnel and generally report symptoms such as rough running, stalling and/or no start within a few miles of refueling the vehicle with gasoline. Volkswagen indicated that the testing of fuel samples from complaint vehicles found that

nearly 90 percent contained high amounts of gasoline.

Volkswagen implemented design changes for the HPFP in May 2008, September 2009 and November 2010 to improve the robustness of the pump when used with poor quality fuel. ODI analysis of HPFP failures identified from all sources shows failure rates of 0.53% for MY 2009 vehicles and 0.11% for MY 2010 vehicles.

This investigation has been upgraded to an Engineering Analysis (EA11-003) to continue to investigate the issues with mis-fueling and HPFP design identified during the Preliminary Evaluation.