



U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE09-035
Date Opened: 07/17/2009
Principal Investigator: Christopher Lash
Subject: Vehicle Stall/Loss of motive power
Date Closed: 11/19/2009

Manufacturer: Volkswagen of America, Inc.
Products: 2008 – 2009 Volkswagen EOS/Jetta/GTI & Audi A3/TT with DSG Transmission
Population: 69,000 (estimated)

Problem Description: The direct shift gearbox can malfunction at any speed and cause the vehicle to abruptly lose motive power, which may increase the risk of a crash.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	40	139	172
Crashes/Fires:	0	0	0
Injury Incidents:	0	0	0
# Injuries:	0	0	0
Fatality Incidents:	0	0	0
# Fatalities:	0	0	0
Other*:	0	317	317

*Description of Other: DSG Gearbox temperature sensor warranty claims.

Action: This Preliminary Evaluation is closed. Volkswagen Recall 09V-333.

Engineer: Christopher Lash *CL*

Date: 11/19/2009

Div. Chief: Jeffrey L. Quandt

Date: 11/19/2009

Office Dir.: Kathleen C. DeMeter

Date: 11/19/2009

Summary: The subject vehicles are equipped with direct shift gearbox (DSG) transmissions, which feature a 6-speed automatic gearbox with two wet running clutches (dual clutch) in which the clutch mechanism and gear changes are electrohydraulically operated by a mechatronic control unit. The DSG mechatronic controller includes extensive self diagnostic functions and strategies to ensure safe operation and prevent system/component damage in the event of component failures or harsh operating conditions. The basic hierarchy of fault modes includes some that only result in the storage of a diagnostic trouble code (DTC) and cause no loss of function, some that store a DTC and reduce vehicle operation to a limp home mode, and some that store a DTC and cause an interruption of motive power (i.e., open clutch). The driver is alerted to the latter two modes by the dash gear position indicator (PRNDS) flashing.

One of the conditions that results in interruption of motive power is excess gearbox temperature. The system initially responds to increased gearbox temperature by ramping down engine torque. If the temperature keeps rising the mechatronic unit responds by opening the clutch. In a defect information report submitted to NHTSA on August 20, 2009, Volkswagen described a potential defect in the wiring harnesses of the DSG gearbox temperature sensors used in approximately 16,000 model year (MY) 2009 and 2010 Volkswagen (EOS, Jetta and GTI) and Audi (A3 and TT/TT roadster) vehicles equipped with DSG transmissions and built from September 2008 through August 2009 (NHTSA Recall No. 09V-333, Volkswagen Recall No. 37E3/S7 and Audi Recall No 37E4/J7).

Volkswagen provided this description of the defect, "the wiring harness of a temperature sensor in the DSG may have connector wires that were insufficiently crimped by the connector supplier during a limited production period. With insufficiently crimped connector wires, a temperature sensor has the potential to falsely detect a high gearbox oil temperature, causing the transmission to abruptly shift to neutral. If this happens, the selector lever position indicator within the instrument panel will flash. In addition, the depress brake pedal indicator light will be illuminated, alerting the driver to apply the brakes. In heavy traffic, the abrupt shift to neutral could lead to a crash without warning." Volkswagen estimated that less than one percent of the recalled vehicles may contain the defect condition.

ODI identified 40 complaints that appear to be related to the temperature sensor defect condition described by Volkswagen. Volkswagen received 139 complaints related to the condition, with 7 involving vehicles reported to ODI, resulting in a 172 total complaints to ODI and Volkswagen. All of these complaints involve the MY 2009 and 2010 vehicles subject to Recall 09V-333.

ODI also identified complaints of harsh/jerky shifting in some Volkswagen vehicles with DSG. Volkswagen attributed this condition, which typically occurs at very low speeds, to excessive wear in the bushings of the two solenoid valves in the mechatronic unit that control clutch operation. Volkswagen does not believe that this condition is a safety defect because the changes in shift quality develop gradually over time, do not cause a loss of motive power and have not resulted in any fatalities, injuries or serious crashes (there were three reported property damage incidents resulting in minor body damage in very low speed, parking maneuvers). Volkswagen addressed this problem in the field with a customer service program that includes the replacement of potentially affected mechatronic units as well as a 10 year/100,000 mile extended warranty.

This investigation is closed with Volkswagen's recall of the defect condition that may result in a loss of motive power while driving.