



U.S. Department  
of Transportation

**National Highway  
Traffic Safety  
Administration**

# ODI RESUME

**Investigation:** PE 13-033  
**Date Opened:** 10/17/2013  
**Investigator:** Steve Mchenry  
**Approver:** Frank Borris  
**Subject:** Brake hydraulic control module failure

**Date Closed:** 04/04/2014  
**Reviewer:** Jeff Quandt

## MANUFACTURER & PRODUCT INFORMATION

**Manufacturer:** Hyundai Motor Company  
**Products:** 2009 - 2012 Hyundai Genesis  
**Population:** 75,753

**Problem Description:** Consumers allege intermittent incidents of low/soft brake pedal with reduced brake effectiveness.

## FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
<b>Complaints:</b>	64	730	769**
<b>Crashes/Fires:</b>	3	4	5**
<b>Injury Incidents:</b>	0	1	1
<b>Number of Injuries:</b>	0	1	1
<b>Fatality Incidents:</b>	0	0	0
<b>Other*:</b>	0	1,717	1,717

\*Description of Other: Warranty claims for the replacement of the HECU

\*\* Total eliminates duplicates received by ODI and manufacturer.

## ACTION / SUMMARY INFORMATION

**Action:** This investigation is closed. See Recall 13V-489.

### Summary:

On October 28, 2013, Hyundai Motor Company (Hyundai) submitted a Defect Information Report (DIR) to NHTSA describing a safety defect in the braking system of approximately 43,500 model year (MY) 2009 through 2012 Hyundai Genesis sedans (NHTSA Recall No. 13V-489). The Hyundai report indicates that the recalled vehicles may contain brake fluid that does not sufficiently inhibit corrosion on the zinc plating of control valve armatures in the Hydraulic Electronic Control Unit (HECU) module. The DIR indicated that, over time, the build-up of corrosion products may affect operation of HECU control valves, resulting in a low/soft brake pedal with reduced brake effectiveness, which may increase the risk of a crash.

In October 2011, the HECU supplier notified Hyundai that the brake fluid used in production plants was causing corrosion of valve armatures in the control module. The supplier changed the coating of the valve armatures in late March 2012 to correct the problem in production vehicles. Hyundai's recall includes Genesis vehicles produced prior to the implementation of the HECU change.

In March 2013, Hyundai initiated a Service Campaign (TL6) to replace brake fluid in the subject vehicles with brake fluid with better corrosion resistance properties. According to Hyundai's DIR letter, after PE13-033 was opened, the company noted that some of the vehicles serviced in the TL6 campaign subsequently required HECU replacement. This was an indication that internal corrosion had progressed enough to affect valve operation and brake performance, prompting Hyundai to conduct a safety recall. Hyundai's repair procedures for 13V-489 require brake system flushing and replacement in all recalled vehicles with a new fluid containing the necessary corrosion inhibitor. In addition, for

vehicles produced prior to June 1, 2010, dealers will perform an inspection procedure to verify that the HECU is functioning properly and replace units that do not meet the test requirements. Hyundai indicated that, based on analysis of claim data, only vehicles produced prior to June 1, 2010 have been in service long enough to require the additional inspection/replacement of the HECU.

Analysis of failure data reported to NHTSA and provided by Hyundai in response to ODI's information request letter for PE13-033 identified 756 complaints and 1,683 warranty claims for 30,114 subject vehicles produced prior to June 1, 2010, resulting in a complaint rate of 25.1 incidents per thousand vehicles (IPTV) and a claim rate of 5.6 percent. The MY 2009 vehicles, with the longest exposure times, experienced the highest complaint (33.5 IPTV) and warranty (7.0 percent) rates. For the 45,639 subject vehicles produced after June 1, 2010, ODI identified 13 complaints and 34 warranty claims, resulting in a complaint rate of 0.3 IPTV and a warranty claim rate of 0.1 percent, indicating that the brake fluid corrosion concern had not progressed far enough to result in significant rates of brake system performance symptoms in those vehicles.

This investigation is closed. ODI will continue to monitor complaints to evaluate the effectiveness of Hyundai's recall.

The VOQs noted in the Failure Report are:

10569231, 10560898, 10560495, 10559360, 10558279, 10558264, 10556964, 10556631, 10556577, 10556322, 10554988, 10554802, 10554122, 10552958, 10551817, 10551157, 10551110, 10551092, 10550791, 10550773, 10550431, 10549750, 10549634, 10549629, 10549567, 10549402, 10549376, 10549270, 10549228, 10549186, 10549021, 10548903, 10548823, 10548791, 10548737, 10548722, 10548716, 10548705, 10546565, 10544803, 10543663, 10542962, 10541959, 10541741, 10538208, 10537934, 10536652, 10535436, 10533459, 10525123, 10523412, 10514041, 10511037, 10510525, 10502374, 10499922, 10497935, 10492198, 10491494.