



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 18-012
Date Opened: 11/20/2018
Investigator: Sean Hays
Approver: Stephen Ridella
Subject: Brake Vacuum Pump Failure

Date Closed: 04/10/2022
Reviewer: Tanya Topka

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: General Motors, LLC
Products: 2014-2016 GM 1500 Pickups/SUVs (K2XX Platform) (see summary)
Population: 2,505,526

Problem Description: The power brake vacuum pump can degrade causing the brake pedal to become hard resulting in extended stopping distance.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	1,415	2,903	4126**
Crashes/Fires:	94	119	206**
Injury Incidents:	15	20	31**
Number of Injuries:	24	28	47**
Fatality Incidents:	0	0	0
Other*:	0	20,333	20,333

*Description of Other: General Motors Warranty Claims

** Total eliminates duplicates received by ODI and manufacturer.

ACTION / SUMMARY INFORMATION

Action: Close Preliminary Evaluation PE18-012. See NHTSA Recall 19V-645.

Summary:

On November 20, 2018, the Office of Defects Investigations (ODI) opened PE18-012 to investigate instances of sudden onset of a hard brake pedal that could result in extended stopping distance due to an issue with the brake assist vacuum pump in model year (MY) 2014 through 2016 GMC Sierra 1500 and Chevrolet Silverado 1500 series pickup trucks and MY 2015 through 2016 Cadillac Escalade, Chevrolet Suburban, Chevrolet Tahoe, and GMC Yukon SUVs.

If the brake assist vacuum pump fails to operate as intended, the amount of brake power assist supplied to the driver can be significantly reduced, extending the subject vehicle stopping distance. GM stated that the root cause of pump failures was due to foreign debris such as oil sludge in the engine oil. GM stated that this debris can become trapped by the oil inlet filter screen. Under normal operation, this screen allows a small amount of oil into the brake vacuum pump. The foreign debris can, over time, clog the pump which can cause a loss of lubrication and a reduction in the amount of vacuum produced leading to a hard pedal and extended stopping distance.

On December 13, 2018, GM issued a Special Coverage (N182202780) for the brake vacuum pump issue in MY 2014-2017 trucks and 2015-2017 SUVs on the K2XX platform for 6 years or 72,000 miles. Special Coverage repair includes the replacement of the vacuum pump and vacuum pump belt. Consumers received notification of the coverage via mail.

On September 6, 2019, GM notified NHTSA that it was conducting safety recall 19V-645 which reprograms the

electronic brake control module (EBCM) and included approximately 3.5 million trucks and SUVs. In October 2019, GM extended the terms of special coverage N182202780 to 10 years or 150,000 miles as well as now including the entire scope of recall 19V-645. In October 2020, GM expanded the scope of coverage N182202780 to include the MY 2018 Escalade and 2019 Tahoe.

The remedy implemented in GM recall 19V-645 appears to be sufficient in addressing the safety-related concerns of this issue. Loss of vacuum assist now occurs at a progressive rate as well as there being a more timely warning of a brake problem to the driver through the driver information center (DIC). In view of the recall action and revision to the special coverage, this Preliminary Evaluation is closed. The agency reserves the right to take additional action if warranted by new circumstances.

The ODI reports cited above are available for review online at [NHTSA.gov](https://www.nhtsa.gov) under the identification numbers in the attached document.

Prior to Opening PE18-012:

10611137,10673007,10714400,10787180,10818785,10826151,10837509,10891627,10896962,10904757,10911185,10919906,10928550,10930061,10956664,10967071,10984491,10984684,10991595,10992092,10992868,10993922,10995134,10995718,11001423,11001938,11002554,11003691,11006271,11011875,11013363,11013706,11014072,11018809,11020065,11020267,11020372,11021253,11021419,11021601,11022709,11025403,11030016,11030450,11030685,11030722,11031984,11032103,11033088,11033883,11033911,11034518,11034747,11034792,11040665,11041545,11041607,11042006,11043192,11044677,11045528,11045731,11045921,11046553,11046974,11047034,11047239,11047629,11047981,11048333,11048544,11052302,11053444,11053948,11054123,11054559,11054565,11054734,11055232,11055292,11055488,11056319,11056635,11056908,11058306,11060689,11060963,11062072,11062858,11063087,11063192,11064080,11064326,11064605,11064698,11065274,11065323,11066885,11067234,11067395,11072654,11072905,11073454,11073735,11073759,11075730,11078644,11078820,11078931,11078952,11080286,11080863,11080953,11081140,11081406,11081459,11082247,11082296,11083289,11084250,11084610,11084934,11088926,11089173,11089278,11089691,11090220,11090358,11090809,11090895,11091404,11091924,11093803,11094026,11094113,11094120,11097151,11097335,11098687,11098785,11099906,11099907,11100297,11100502,11101165,11101726,11101822,11102108,11102448,11103906,11103950,11104097,11104203,11105051,11109842,11110010,11110264,11110372,11110393,11110451,11110640,11111160,11111748,11111834,11112722,11113270,11113548,11114005,11114244,11114340,11114688,11115151,11115892,11118723,11118870,11118984,11119696,11119847,11119907,11121172,11121611,11121618,11121979,11122443,11122741,11122933,11123463,11123567,11124155,11124227,11124506,11128191,11128490,11128867,11129140,11129146,11129227,11129377,11129398,11129455,11129487,11129715,11130227,11130321,11130345,11130530,11130896,11131066,11131903,11131959,11131979,11132014,11132455,11132841,11132847,11133153,11139210,11139225,11139264,11139356,11139614,11139980,11140312,11140321,11140519,11140624,11141195,11141329,11141392,11141592,11141673,11141678,11141831,11142374,11142544,11142662,11142685,11142826,11143349,11143710,11143759,11143937,11144904,11144950,11145175,11145176,11145284,11145304,11149853,11150354,11150701,11150711,11150901,11150912,11151117,11151216,11151600,11151673,11151676,11151680,11151750,11151976,11151980,11152114,11152187,11152408,11152422,11152468

After Opening PE18-012:

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