

FCA US LLC Chronology
Clutch Overstroke
Submitted on May 10, 2016

- On September 22, 2015, the FCA US LLC (“FCA US”) Vehicle Safety and Regulatory Compliance (“VSRC”) organization opened an investigation as a result of media coverage about a reoccurring clutch issue on September 21, 2015.
- On September 25, 2015, Quality Engineering Center (“QEC”) placed parts on 100% retention. Clutch warranty is 12 months / 12,000 miles; customer data indicates that diaphragm spring fractures have been occurring between 15,000-48,000 miles.
- On October 5, 2015, FCA US sent an engineer to Atlanta, GA to review the customer vehicle and install a verified new clutch assembly and hydraulic release system.
- On October 14, 2015, virtual stack analysis and dimensional analysis completed showing maximum and minimum pedal travel, and the required restriction to maintain no more than 9 mm of diaphragm spring travel.
- On October 29, 2015, the FCA US VSRC initiated study request T0205 with FCA Italy S.p.A. (“FCA Italy”). The study request intended to provide analysis of the system design, root cause of fatigued diaphragm springs and proposed corrective actions.
- On November 9, 2015, the chassis team in Santa Fe, Mexico reviewed the clutch system in correlation with the study request on October 29, 2015.
- On November 17, 2015, FCA US began evaluating mathematical data provided by FCA Italy and started bench testing to confirm travel efficiency/stroke loss.
- On December 1, 2015, the FCA US VSRC received clutch release system and clutch assembly design analysis results from FCA Italy indicating the potential for overstroke of the clutch assembly leading to a fatigue fracture of the of the diaphragm spring.
- On December 3, 2015, the FCA US VSRC began an investigation of options for reduced system travel, including clutch pedal stop, modified hydraulic pipe, hydraulic system dampers and new clutch assembly.
- On December 14, 2015, seven parts were reviewed at the FCA US QEC with three clutch assemblies displaying a broken diaphragm spring. The parts were then sent to the supplier for analysis.
- On February 1, 2016, FCA US discussed the investigation with National Highway Traffic Safety Administration (“NHTSA”)
- On February 8, 2016, a field study was initiated, specific to 20 VINs, for the purpose of retaining parts for analysis.
- On February 9, 2016, FCA US identified three vehicles that may have exhibited the condition of overstroke. The vehicles were scheduled individually for FCA US engineering and QEC technicians to evaluate the clutch release system and clutch assembly.
- On February 19, 2016, Automotive Products (“AP”) completed bench testing that confirmed the clutch diaphragm spring was capable up to 9.4 mm of travel.
- Between March 2, 2016, and April 21, 2016, FCA US engineering and QEC technicians evaluated the clutch release system and clutch assembly of the vehicles identified on February 9, 2016.
- On March 31, 2016, the field study investigation submitted a returned part to an internal FCA US lab for a material analysis.
- On March 31, 2016, FCA US discussed the investigation with NHTSA again.
- On April 8, 2016, the supplier provided decarburization specifications, chemical composition and hardness values of the part; after further review with FCA US Materials Engineering, the part material was excluded as a contributing factor to the failure.
- On April 11, 2016, FCA US Supplier Quality Engineering, Chassis Engineering, Transmission Engineering and Materials Engineering discussed all available evidence and determined the root

cause to be the clutch release system which was designed to provide up to 10.63 mm of travel, while the clutch assembly can only accommodate 9.4 mm of travel by design.

- On April 11, 2016, FCA US discussed the investigation with NHTSA further.
- On April 19, 2016, FCA US held a follow up discussion with NHTSA
- The suspect period was established as June 21, 2010, start of production for the 2012 MY Fiat 500 ("FF") to January 29, 2016, end of production for the 2016 MY FF at Toluca Assembly Plant. Production has not been corrected, the last 2016 MY vehicle was built on January 29, 2016.
- As of April 29, 2016, FCA US identified approximately 26 CAIRs, 10 VOQs and zero field reports related to this issue.
- As of April 29, 2016, FCA US is unaware of any accidents or injuries related to this issue.
- On May 5, 2016, FCA US determined, through the Vehicle Regulations Committee, to conduct a voluntary safety recall of the affected vehicles.