

FCA US LLC Chronology  
9-Speed Harness Crimp  
Submitted on July 12, 2016

- On July 10, 2014, the Tier 1 supplier identified an insufficient crimp in the transmission wire harness as the root cause for a 2015 MY Chrysler 200 (“UF”) in the field that set a P0984 solenoid fault and went into neutral. This was identified through a warranty return. No one at FCA US LLC (“FCA US”) was notified of the resulting 8D investigation until Q4 of 2015 when a warranty investigation (October 2015) brought this insufficient crimp to FCA US’ attention.
- On July 14, 2014, the frequency of crimp cross sectional checks was increased from once per die, each shift (eight hours) to once per die every two hours. The crimp cross section photos were saved by the supplier for traceability purposes. Crimp cross sections are included in incoming certification documents from the Tier 2 supplier to the Tier 1 supplier to ensure correct crimping condition prior to assembly into sensor clusters.
- On July 31, 2014, statistical process controls were added to crimp height and width as secondary validation of tool wear condition. Crimp Pull Force verification was added with force monitoring as an additional crimp quality check.
- During the week of September 1, 2014, the crimp specification was modified from  $1.41 \pm 0.03$  mm to  $1.35 \pm 0.05$  mm to improve wire compression.
- During the week of September 8, 2014, the manual micrometer measurement equipment was changed to a pneumatic device to reduce operator variation.
- During the week of September 22, 2014, the crimping process was modified so that it could only operate with a correct height and width measurement to the revised crimp specification.
- On November 1, 2014, the Tier 2 supplier established a clean point for parts supplied to FCA US Assembly Plants.
- In September 2015, increased MOPAR demand level for the transmission wire harness was identified for further warranty investigation.
- In October 2015, an analysis of the warranty data indicated an increase in Malfunction Indicator Lamp (“MIL”) codes. Investigation showed that replaced transmission wire harnesses on this population of vehicles were not on an FCA US parts retention list and were being disposed of by dealerships at that time. FCA US subsequently placed these parts on retention to assist with the investigation.
- On December 8, 2015, FCA US Supplier Quality visited the Tier 2 supplier’s Monterrey Mexico manufacturing facility to review the crimping process.
- On January 22, 2016, bench thermal shock testing was completed on suspect transmission wire harness terminals returned from the field, which indicated significant drift in resistance over time.
- On February 8, 2016, FCA US visited the Tier 1 supplier in Mexico. Transmission wire harness conditions identified from returned field parts were reviewed in detail with consensus on cause and potential scope reached.
- On February 11, 2016, FCA US began testing of suspect transmission wire harnesses from the field on dynamometers and in-vehicle to further confirm the insufficient crimp as the root cause for solenoid faults in vehicles built during the suspect timeframe.
- On April 29, 2016, FCA US was able to recreate a P0978 fault in a taxi fleet vehicle with a transmission returned from the field containing a transmission wire harness with an insufficient crimp.
- On May 5, 2016, the FCA US Vehicle Safety and Regulatory Compliance (“VSRC”) organization opened an investigation.

- Between May 17, 2016, and May 31, 2016, weekly meetings with FCA US engineering, quality and Supplier Quality to discuss investigation results and actions.
- On June 8, 2016, the investigation was reviewed at the Investigation Steering Group (“ISG”) where it was recommended to proceed to the FCA US Vehicle Regulations Committee (“VRC”) on July 5, 2016.
- On July 5, 2016, FCA US determined, through the VRC, to conduct a voluntary safety recall of the affected vehicles.
- The suspect period was established as October 13, 2012, to September 9, 2014, at the Tier 1 supplier. The suspect period at FCA assembly plants is start of production November 5, 2012, through September 23, 2015. Affected plants are Sterling Heights Assembly Plant (“SHAP”), Toledo North Assembly Plant (“TNAP”), Melfi Assembly Plant and Tofas Assembly Plant.
- As of June 30, 2016, FCA US identified approximately 59 CAIRs, 50 VOQs and one field report related to this issue.
- As of June 30, 2016, FCA US identified 3,981 warranty claims potentially related to this issue.
- As of June 30, 2016, FCA US is unaware of any accidents or injuries potentially related to this issue.