

Chronology of Defect / Noncompliance Determination

Date of submission: 4/14/2022

Ford Motor Company (Ford) Recall No. 22S27 – Certain 2020-2022 model year Explorer vehicles – Rear Axle Bolt Fractures.

Provide the chronology of events leading up to the defect decision or test data for the noncompliance decision.

On August 10, 2021, Engineering presented an issue to Ford's Critical Concern Review Group where the rear axle horizontal mounting bolt was fracturing on some 2020-2021 MY Explorer vehicles built with a 3-point mounted axle design. These failures were discovered by Engineering when reviewing warranty claims.

On August 18, 2021, CCRG requested to kick off a 14D to understand the effect on vehicle operation, and the scope of vehicles affected. From August to December 2021, Engineering analyzed manufacturing data and returned warranty parts, as well as completed CAE analysis and fastener testing, to determine rate of occurrence, affected population, and potential effects on vehicle operation.

From January to February 2022, CCRG worked with Engineering and data & analytics specialists to deep dive into the differences between power packs, effects on vehicle operation, and the scope of the populations. This analysis identified loss of park as a potential effect on vehicle in severe cases.

In March 2022, Engineering worked with Ford Dealerships to confirm the effects on vehicle operation. Two dealerships confirmed damage on the rear driveshaft that resulted in the loss of park. Engineering confirmed Police units are built with a park by cable and would require a hardware change to avoid the loss of park condition, unlike retail units which are built with electronic park brake software and require a software update to avoid a loss of park condition.

On February 20, 2020, the rear module assembler (Dakkota) implemented a corrective action reducing the installation torque target, from 100° to 96° in the torque plus angle specification. Additionally, on April 20, 2020, Dakkota modified the installation torque process and removed manual "clicking" after installation of the bolt using an automatic DC nut runner because new tools capable to higher torques were implemented. ("Clicking" involved using a torque wrench to check the torque and if needed increase it to a minimum of 260 Nm).

As of April 5, 2022, there have been 235 warranty claims involving the rear axle bolt since December 2019.

On **April 7, 2022**, Ford's Field Review Committee reviewed the concern and approved a field action.

Ford is not aware of any reports of accident or injury related to this condition.

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