

Ford Motor Company (Ford) Recall No. 24S55 Chronology

CERTAIN 2021 and 2022 MY FORD/LINCOLN VEHICLES – NANO INTAKE VALVE

Date of Submission: August 23, 2024

Chronology of Defect / Noncompliance Determination

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

On January 25, 2022, Global CCRG opened an investigation into 2021 Model Year (MY) Lincoln Aviator and Nautilus vehicles equipped with 2.7L and 3.0L Nano EcoBoost gasoline engines after an international investigation discovered twenty-two (22) instances of engine failure at three (3) months in service or less. A review of failed engines revealed that the engine intake valves fractured and fell into the combustion chamber of the engine causing catastrophic engine damage leading to a Loss of Motive Power (LOMP). Based on an analysis of returned fractured valves from failed engines, Ford identified that the potential root cause of the failures was engine intake valve failure due to valves that exceeded the designed specification for hardness, were brittle, and more likely to fracture. Ford determined that this was due to the supplier's grinding processes and the sensitivity of the intake valve material to grinding processes that were not within control specifications. The intake valve material was changed for vehicles produced after October 31, 2021. The new material increased the valve's robustness to keeper groove grinding processes outside of control specifications.

On May 05, 2022, Ford's North America (NA) CCRG opened an investigation regarding early time in-service left-hand engine intake valve fractures on 2021MY Ford and Lincoln vehicles equipped with 2.7L and 3.0L Nano EcoBoost gasoline engines. Teardown analysis of returned failed engines confirmed intake valve fracture on two-hundred fifty-one (251) engines from warranty repairs.

On May 27, 2022, the National Highway Traffic Safety Administration (NHTSA) opened Defect Petition 22-001 in response to an increasing trend of Vehicle Owner Questionnaires (VOQs) submitted by 2021MY Ford Bronco customers alleging LOMP as a result of catastrophic engine damage.

On July 22, 2022, NHTSA opened Preliminary Evaluation (PE) 22-007 to continue their investigation into 2021MY Ford Bronco customer allegations of LOMP. Ford's response was provided to NHTSA on September 28, 2022.

On September 29, 2023, NHTSA opened Engineering Analysis (EA) 23-002 and expanded the scope of their investigation to include all 2021 and 2022MY Ford/Lincoln products that are equipped with the 2.7L and 3.0L Nano EcoBoost engines. Ford's response was provided to NHTSA on January 02, 2024. Ford noted that there was a higher than ambient level of repairs observed for vehicles produced between May 1 and October 31, 2021.

On December 4, 2023, NHTSA personnel visited Ford facilities to observe Ford's engine teardown and laboratory analysis processes for evaluating fractured intake valves.

Between February and August 2024, Ford has participated in several discussions related to fractured intake valves on Nano EcoBoost engines with NHTSA.

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As of August 09, 2024, Ford is aware of 811 global warranty claims confirmed or suspected to be related to fractured intake valves with report dates ranging from February 13, 2021 to June 03, 2024. Ford is aware of 267 field reports with report dates of October 06, 2020 to October 18, 2023. Ford is aware of 223 customer reports with report dates of March 31, 2021 to August 29, 2023.

On August 16, 2024, 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.