



U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

ODI RESUME

OFFICE OF DEFECTS INVESTIGATION



Investigation: PE23023
Prompted By: VOQ and FR Review
Date Opened: 12/13/2023
Investigator: Arnaldo Torres Diaz **Reviewer:** Bruce York-b
Approver: Tanya Topka
Subject: Complete loss of motive power due to engine failure

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: Nissan North America, Inc.
Products: 2021-2023 NISSAN ROGUE 2019-2021 NISSAN ALTIMA 2019-2021 INFINITI QX50
Population: 454,840 (Estimated)

Problem Description: Engine failure can lead to loss of motive power with no ability to re-start

FAILURE REPORT SUMMARY

	ODI	Manufacturer	EWR D&I	Other	Total	EWR Field Reports
All Incidents:	6	0	0	0	6	CONF
Crashes/Fires:	0	0	0	0	0	0
Injury Incidents:	0	0	0	0	0	0
Number of Injuries:	0	0	0	0	0	0
Fatality Incidents:	0	0	0	0	0	0
Number of Fatalities:	0	0	0	0	0	0

Description of Other: EWR Field Reports

ACTION/SUMMARY INFORMATION

Action: Open this Preliminary Evaluation (PE)

Summary:

The Office of Defects Investigation (ODI) has identified six (6) Vehicle Owner Questionnaires (VOQ) and multiple Field Reports (FR) alleging engine failure, loss of motive power, engine knock or noise and/or metal chunks and shavings found in the oil pan of Nissan North America Inc. (Nissan) vehicles equipped with both

the KR15DDT and KR20DDET engines. The only model Nissan has manufactured with a KR15DDT engine is the Rogue. Nissan manufactured 3 models equipped with the KR20DDET engine. These models include the Altima, QX50, and QX55. Both the 3-cylinder, 1.5-liter KR15DDT, and 4-cylinder, 2.0-liter KR20DDET engines are unique in that they use a variable compression ratio that allows for high power output and high fuel efficiency at the same time.

Based on an analysis of the VOQ and FR data, ODI has identified three (3) vehicle models with elevated variable compression engine failure rates. These includes 2021-2023 Nissan Rogue equipped with KR15DDT engine; 2019-2021 Nissan Altima; and 2019-2021 Infinity QX50, both equipped with the KR20DDET engine. During discussions with Nissan, ODI learned that they have attempted to address main bearing and L-link damage/seizures on the KR15DDT and KR20DDET engines by introducing multiple manufacturing processes changes over time.

A Preliminary Evaluation has been opened to assess the scope, frequency, and consequences of these variable compression engines. Additionally, ODI may expand the scope of the subject population during the investigation, if needed.

To review the ODI reports cited in the Opening Resume ODI Report Identification Number document, go to [NHTSA.gov](https://www.nhtsa.gov).