

NVH Diagnostic Report

Report Date	Record Name	Record Date	Record Length
August 16, 2021	2019 Ford Ranger 4WD 2.3L Door Axle Code 71 or 73 (15)	2021-08-16 17:31:39	06:56.5

Vehicle Data:

- Manufacturer: Ford
- Year: 2019
- Model: Ranger
- Powertrain: Four Wheel Drive
- Number of Cylinders: 4
- Tire Diameter: 31.61
- Rear Axle Gear Ratio: 3.73
- Front Axle Gear Ratio: 3.73
- Transfer Case Gear Ratio: 1.0
- Transmission Speeds: 10

Relevant Settings:

- Amplitude Threshold: 0.001g

Diagnostic Results

The diagnosis shown below is the primary vibration detected. Repair this vibration first and then re-test for additional vibrations if needed.

(D1) 1st Order Driveshaft Speed Related Vibration

Definition: First order Driveshaft speed related vibrations cause one shake or disturbance for each revolution of the Driveshaft. There are over 123 conditions that can cause a driveshaft speed related vibration.

Totals

Tire Speed Related Vibrations

Order	Times Detected	Average Amplitude (g)
1st	518	0.019
2nd	322	0.018
3rd	549	0.021

Driveshaft Speed Related Vibrations

Order	Times Detected	Average Amplitude (g)
1st	575	0.025
2nd	7	0.023
3rd	2	0.035

Engine Speed Related Vibrations

Order	Times Detected	Average Amplitude (g)
1st	4	0.011
2nd	124	0.023

Vibration Breakdown By Vehicle Speed

The NVH app takes samples of the vibrations on your vehicle twice per second.

- The "Count" column shown below indicates the number of times each type of vibration was detected in that particular vehicle speed range.
- The "Count (Time) Spent in Range" column shows the number of half second intervals spent driving at that vehicle speed range, and the amount of time spent driving at that vehicle speed range.
- The "Percentage" column shows the percentage of time the vibration was detected at that vehicle speed range. It is possible for this to exceed 100% if multiple instances of the vibration were detected in the same half second interval.

Tire Speed Related Vibration Breakdown

1st Order Tire Speed Related Vibration Breakdown

Vehicle Speed	Count	Count (Time) Spent in Range	Percentage	Average Amplitude (g)
75-79 MPH	168	263 (02:11.5)	63.88%	0.016
80-84 MPH	289	438 (03:39.0)	65.98%	0.019
85-89 MPH	61	70 (00:35.0)	87.14%	0.027

2nd Order Tire Speed Related Vibration Breakdown

Vehicle Speed	Count	Count (Time) Spent in Range	Percentage	Average Amplitude (g)
55-59 MPH	2	4 (00:02.0)	50.00%	0.008
60-64 MPH	1	4 (00:02.0)	25.00%	0.008
75-79 MPH	45	263 (02:11.5)	17.11%	0.016
80-84 MPH	223	438 (03:39.0)	50.91%	0.020
85-89 MPH	51	70 (00:35.0)	72.86%	0.015

3rd Order Tire Speed Related Vibration Breakdown

Vehicle Speed	Count	Count (Time) Spent in Range	Percentage	Average Amplitude (g)
50-54 MPH	2	4 (00:02.0)	50.00%	0.012
75-79 MPH	101	263 (02:11.5)	38.40%	0.016
80-84 MPH	369	438 (03:39.0)	84.25%	0.023
85-89 MPH	77	70 (00:35.0)	110.00%	0.021

Driveshaft Speed Related Vibration Breakdown

1st Order Driveshaft Speed Related Vibration Breakdown

Vehicle Speed	Count	Count (Time) Spent in Range	Percentage	Average Amplitude (g)
35-39 MPH	2	4 (00:02.0)	50.00%	0.019
50-54 MPH	1	4 (00:02.0)	25.00%	0.011
60-64 MPH	3	4 (00:02.0)	75.00%	0.008
65-69 MPH	7	8 (00:04.0)	87.50%	0.013
70-74 MPH	30	24 (00:12.0)	125.00%	0.043
75-79 MPH	274	263 (02:11.5)	104.18%	0.027
80-84 MPH	258	438 (03:39.0)	58.90%	0.022

2nd Order Driveshaft Speed Related Vibration Breakdown

Vehicle Speed	Count	Count (Time) Spent in Range	Percentage	Average Amplitude (g)
25-29 MPH	4	4 (00:02.0)	100.00%	0.034
55-59 MPH	3	4 (00:02.0)	75.00%	0.008

3rd Order Driveshaft Speed Related Vibration Breakdown

Vehicle Speed	Count	Count (Time) Spent in Range	Percentage	Average Amplitude (g)
30-34 MPH	2	2 (00:01.0)	100.00%	0.035

Engine Speed Related Vibration Breakdown

1st Order Engine Speed Related Vibration Breakdown

Vehicle Speed	Count	Count (Time) Spent in Range	Percentage	Average Amplitude (g)
45-49 MPH	2	2 (00:01.0)	100.00%	0.014
55-59 MPH	2	4 (00:02.0)	50.00%	0.007

2nd Order Engine Speed Related Vibration Breakdown

Vehicle Speed	Count	Count (Time) Spent in Range	Percentage	Average Amplitude (g)
25-29 MPH	4	4 (00:02.0)	100.00%	0.034
60-64 MPH	3	4 (00:02.0)	75.00%	0.008
80-84 MPH	117	438 (03:39.0)	26.71%	0.023

This report, along with the data and diagnoses it contains, was generated by the NVH app (iOS Version: 3.2.1 (1)), created by Vibrate Software, Inc.

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