

Part 573 Safety Recall Report

22V-148

Manufacturer Name : Vicinity Motor Corporation

Submission Date : APR 14, 2022

NHTSA Recall No. : 22V-148

Manufacturer Recall No. : Campaign 000-043



Manufacturer Information :

Manufacturer Name : Vicinity Motor Corporation

Address : 3168 - 262nd Street

Aldergrove 00 V4W 2Z6

Company phone : 1-604-607-4000

Population :

Number of potentially involved : 92

Estimated percentage with defect : 19 %

Vehicle Information :

Vehicle 1 : 2020-2021 Vicinity Vi38
Vehicle Type : LOW VOLUME VEHICLES
Body Style : OTHER
Power Train : DIESEL

Descriptive Information : An investigation was carried out in tandem with manufacturing and supply partners, and it was determined that the defect (steering box setup and alignment of IFS steering axle) is limited to the batch of vehicles that were produced for Delta Airlines in the US - 92 Vi38 Buses. Quality Assurance mechanisms were likely compromised for this batch of vehicles due to personnel changes and training shortcomings.

To date, all warranty claims citing this defect have been limited to the Delta Airlines population and have manifested shortly after the vehicles entered service, with the failures occurring at an average of 6081 miles.

Conversely, vehicles that were produced prior to this batch have been in operation for a far greater period of time, and have substantially higher average accumulated mileage (169,368mi.) without any exhibiting the same defect.

Production Dates : DEC 01, 2020 - MAY 31, 2021

VIN Range 1 : Begin : 2G9B38AA7MA098529	End : 2G9B38AA7MA098544	<input type="checkbox"/> Not sequential
VIN Range 2 : Begin : 2G9B38AA2MA098521	End : 2G9B38AA2MA098527	<input type="checkbox"/> Not sequential
VIN Range 3 : Begin : 2G9B38AA7MA098546	End : 2G9B38AA7MA098550	<input type="checkbox"/> Not sequential
VIN Range 4 : Begin : 2G9B38AA9MA098516	End : 2G9B38AA9MA098516	<input type="checkbox"/> Not sequential
VIN Range 5 : Begin : 2G9B38AA2MA098518	End : 2G9B38AA2MA098519	<input type="checkbox"/> Not sequential
VIN Range 6 : Begin : 2G9B38AA7MA098577	End : 2G9B38AA7MA098577	<input type="checkbox"/> Not sequential
VIN Range 7 : Begin : 1G9B38AA9MA545528	End : 1G9B38AA9MA545528	<input type="checkbox"/> Not sequential
VIN Range 8 : Begin : 1G9B38AA9MA545545	End : 1G9B38AA9MA545545	<input type="checkbox"/> Not sequential
VIN Range 9 : Begin : 2G9B38AA2MA098552	End : 2G9B38AA2MA098553	<input type="checkbox"/> Not sequential
VIN Range 10 : Begin : 2G9B38AA8MA098555	End : 2G9B38AA8MA098557	<input type="checkbox"/> Not sequential
VIN Range 11 : Begin : 2G9B38AA1MA098560	End : 2G9B38AA1MA098568	<input type="checkbox"/> Not sequential
VIN Range 12 : Begin : 2G9B38AA6MA098571	End : 2G9B38AA6MA098572	<input type="checkbox"/> Not sequential
VIN Range 13 : Begin : 1G9B38AA3MA545573	End : 1G9B38AA3MA545573	<input type="checkbox"/> Not sequential
VIN Range 14 : Begin : 1G9B38AA9MA545576	End : 1G9B38AA9MA545576	<input type="checkbox"/> Not sequential
VIN Range 15 : Begin : 1G9B38AA8MA545584	End : 1G9B38AA8MA545584	<input type="checkbox"/> Not sequential
VIN Range 16 : Begin : 2G9B38AA1MA098574	End : 2G9B38AA1MA098575	<input type="checkbox"/> Not sequential
VIN Range 17 : Begin : 2G9B38AA6MA098585	End : 2G9B38AA6MA098607	<input type="checkbox"/> Not sequential
VIN Range 18 : Begin : 2G9B30AAXMA098610	End : 2G9B30AAXMA098613	<input type="checkbox"/> Not sequential
VIN Range 19 : Begin : 1G9B38AA7MA545558	End : 1G9B38AA7MA545559	<input type="checkbox"/> Not sequential
VIN Range 20 : Begin : 1G9B38AA1MA545569	End : 1G9B38AA1MA545570	<input type="checkbox"/> Not sequential
VIN Range 21 : Begin : 1G9B38AA2MA545578	End : 1G9B38AA2MA545582	<input type="checkbox"/> Not sequential
VIN Range 22 : Begin : 1G9B38AA4MA545520	End : 1G9B38AA4MA545520	<input type="checkbox"/> Not sequential
VIN Range 23 : Begin : 2G9B38AA2MA098583	End : 2G9B38AA2MA098583	<input type="checkbox"/> Not sequential
VIN Range 24 : Begin : 1G9B38AA4MA545517	End : 1G9B38AA4MA545517	<input type="checkbox"/> Not sequential
VIN Range 25 : Begin : 1G9B38AA9MA545528	End : 1G9B38AA9MA545528	<input type="checkbox"/> Not sequential
VIN Range 26 : Begin : 1G9B38AA9MA545545	End : 1G9B38AA9MA545545	<input type="checkbox"/> Not sequential
VIN Range 27 : Begin : 1G9B38AA4MA545551	End : 1G9B38AA4MA545551	<input type="checkbox"/> Not sequential
VIN Range 28 : Begin : 1G9B38AAXMA545554	End : 1G9B38AAXMA545554	<input type="checkbox"/> Not sequential

Description of Defect :

Description of the Defect : Possible cracked or broken mounting ears on the steering box due to over-stress of the steering components.

FMVSS 1 : NR

FMVSS 2 : NR

Description of the Safety Risk : Our analysis has indicated that the combination of the two deficiencies (described under the cause section) could occur simultaneously, leading to an overload situation of the power steering box. This could lead to damage of the steering box housing, including fracture of the mounting lugs and possible loss of steering control, which may result in a crash and/or bodily injury.

Description of the Cause : Data indicates the cause of the defect is likely due to the setup of the steering box and alignment of the IFS steering axle. Specifically, the following deficiencies were noted:

- 1- The end-of-travel pressure relief plungers on the Sheppard M100PNA3 power steering box were incorrectly set. This would result in excessive forces on the steering system when at full-lock.
- 2- The cut-angles of the wheels were seen to be in excess of the manufacture's specifications. This could result in the internal mechanisms of the steering box bottoming-out. If bump-steer inherent to the IFS system would occur simultaneously to the box being bottomed-out the shock load would be transmitted directly to the power steering box.

Identification of Any Warning that can Occur : Noisy steering, poor steering performance, or complete loss of steering.

Involved Components :

Component Name 1 : STEERING GEAR BOX ASSEMBLY

Component Description : SHEPPARD M100PNA3

Component Part Number : 1000-0291

Component Name 2 : STEERING MOUNTING BRACKET

Component Description : STEERING MOUNTING BRACKET

Component Part Number : 1000-7792

Supplier Identification :**Component Manufacturer**

Name : R. H. Sheppard Co., Inc.
Address : 2770 Research Dr.
Rochester Hills Michigan 48309-4901
Country : United States

Chronology :

An warranty claim pertaining to the defect was first reported in late September 2021. citing a fracture of the steering box mounting tabs on a vehicle operated in the US population. It was suspected that external impact may have played a role in the fracture, however as further failures occurred in October 2021, it became clear that there was a systemic issue and an investigation was launched in conjunction with R. H. Sheppard Co., Inc.'s Engineering Center, on Oct.18th 2021.

An engineer was sent to investigate the tentative root cause for the defects, from Oct. 24th-28th 2021.

Recurring meetings with Sheppard began on Nov. 4th 2021 to discuss findings, tests, and the cause of the issue.

An initial campaign was released on Oct. 27th 2021, to notify the customer of the need for inspection. Over the following months, as the likely cause for the defect was identified, campaign updates were issued to the customer as the scope was further refined.

Following campaign update releases (MM/DD/YY):

Release 2:12/13/21 - Revised steering angles and part numbers

Release 3:01/14/22 - Updated affected VINs

Release 4:02/01/22 - Added Canadian VINs

By Nov. 2021, replacement parts began being stocked to supply customers.

The failure mode is being confirmed, with further testing and analysis to be carried out with Sheppard.

The list of vehicles operating in the US, that have been reported to suffer from the defect, to date:

(VIN - Date of Notification)

2G9B38AA6MA098568 - 10/18/21

2G9B38AA4MA098603 - 01/12/22

2G9B38AA8MA098586 - 10/29/21

2G9B38AA2MA098597 - 11/05/21

2G9B38AA3MA098589 - 11/05/21

2G9B38AAXMA098606 - 01/12/22

2G9B38AA2MA098602 - 01/12/22

2G9B38AA4MA098598 - 11/16/21

2G9B38AAXMA098595 - 11/05/21

2G9B38AA6MA098585 - 11/05/21
2G9B38AAXMA098606 - 01/12/22
2G9B38AA8MA098572 - 02/24/22
2G9B38AAXMA098590 - 10/25/21
2G9B38AA4MA098603 - 11/05/21
2G9B38AA1MA098543 - 03/14/22
2G9B38AA9MA098550 - 01/12/22
2G9B38AAXMA098547 - 12/29/21
2G9B38AA3MA098530 - 09/27/21

Description of Remedy :

Description of Remedy Program : The program to remedy the defect in each vehicle is outlined in the Owner Notification Letter (Part 577). It covers the method for inspecting the vehicle for the presence of the defect, and if present, the method for replacing the steering box and bracket. If a vehicle is found to be affected by the defect, the steering box and bracket are replaced under warranty.

All 92 buses that are being recalled as part of this campaign are covered under warranty, and as such, will continue to be remedied and reimbursed as per the terms of the warranty.

Pre-notification remedy costs incurred by customers have been claimed and reimbursed under warranty.

Please refer to the VMC Warranty Guide Booklet for details. It has been uploaded under miscellaneous documents .

Approximate costs incurred by customers, to inspect vehicles and replace the steering gear box assembly if the defect is found, are as follows:

Only inspection, without steering box replacement (No Defect Found):

Labor costs: Up to 150 CAD/hr for 3.5 hrs of work

Miscellaneous costs: 10 CAD

Inspection, followed by steering box replacement (Defect Found):

Labor costs: Up to 150 CAD/hr for 4 hrs of work

Miscellaneous costs: 10 CAD

Steering gear box: 452.45 CAD

Bracket: 190.04 CAD

How Remedy Component Differs from Recalled Component : The components are identical - The distinguishing feature being the correct setup of the component during installation and alignment.

Identify How/When Recall Condition was Corrected in Production : Corrective actions were communicated from our engineering department to production management at the manufacturing facility. Final confirmation steps were added to pre-delivery inspections to ensure that the corrective action was implemented.

Recall Schedule :

Description of Recall Schedule : The campaign was first issued to the customer on October 2021, to notify them of the defect and prescribe mitigating actions. As the cause of the defect was better understood, the scope of the campaign was further developed, and successive campaign updates were issued to the customer.

As such, the notification period is as follows:

Initial Campaign Release (Owner Notification Begin) Date: 10/01/2021

Final Campaign Notification (Owner Notification End) Date: 04/15/2022

(Please note the following:

- The "Planned Owner Notification Begin Date" box is set to the current date, since it does not go back to 10/01/2021 which is the actual start date for the campaign.

- The Owner Notification End Date refers to the notification that will be issued to ensure that the campaign is compliant with NHTSA regulations, and any required outstanding information or language is conveyed to the customer.)

Planned Dealer Notification Date : NR - NR

Planned Owner Notification Date : MAR 11, 2022 - APR 15, 2022

* NR - Not Reported