

Part 573 Safety Recall Report

22V-578

Manufacturer Name : Blue Bird Body Company**Submission Date :** AUG 12, 2022**NHTSA Recall No. :** 22V-578**Manufacturer Recall No. :** R22BX-NSB**Manufacturer Information :****Population :**

Manufacturer Name : Blue Bird Body Company

Number of potentially involved : 49

Address : P.O. Box 937
402 Blue Bird Boulevard Fort Valley
GA 31030

Estimated percentage with defect : 100 %

Company phone : 478-822-2242

Vehicle Information :

Vehicle 1 : 2018-2023 Blue Bird Vision

Vehicle Type : BUSES, MEDIUM & HEAVY VEHICLES

Body Style : OTHER

Power Train : CNG/LPG

Descriptive Information : The population of items of original equipment covered by this report does not include LPG systems

manufactured prior to July, 2015 because that date is when Roush began to use zinc-plated fittings on the return lines in its LPG conversion kits. The population does not include LPG systems shipped after June 30, 2022 because LPG systems shipped after that date had fuel return lines with additional protection that prevents the corrosion at issue here. Because the corrosion at issue here occurs only in the presence of significant amounts of road salt, this notice applies only to the fuel return lines in LPG conversion kits installed in vehicles originally or currently registered in the following states: Connecticut, Delaware, District of Columbia, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and Wisconsin (which are referred to in this Report as the "Salt Belt States"). Roush's conclusion that this report does not apply to fuel return lines that were installed in vehicles that were not operated in the Salt Belt states is based primarily on the following:

(1) all of the 19 warranty claims that reported corrosion of a fuel return line fitting came from vehicles in the Salt Belt states.

(2) Roush's inspection of 166 vehicles from various regions of the United States (the results of which are described in the "Describe the Cause" section of this report) demonstrated that there has been extremely little, if any, corrosion of fittings on vehicles outside of the Salt Belt states.

Production Dates : NOV 30, 2016 - JUL 06, 2022

VIN Range 1 : Begin :

NR

End : NR

 Not sequential

Description of Defect :

Description of the Defect : Some zinc-plated carbon steel fuel return line fittings on Gen 4 and Gen 5 Roush Cleantech LPG fuel conversion kits installed on vehicles operated in the Salt Belt states have exhibited galvanic-reaction-caused corrosion where the stainless-steel crimp collar on the fuel return line contacts the zinc-plated carbon steel fitting, if the zinc-plating has been compromised by road debris pecking. If this occurs, there is a risk that the fuel line fitting could corrode to the point where LPG fuel will leak.

FMVSS 1 : NR

FMVSS 2 : NR

Description of the Safety Risk : If the fuel return line leaks, it could increase the risk of a fire.

Description of the Cause : Roush believes that a galvanic reaction can occur under certain road conditions (i.e., a combination of road debris pecking on the zinc-plated carbon steel fitting, and road salt and moisture from snow/ice/water). This galvanic reaction can create the potential for compromised zinc plating to corrode the carbon steel LPG fuel return line fittings where the stainless-steel crimp collar contacts the fitting. Roush has concluded that this problem is limited to vehicle operated in the Salt Belt States. Roush inspected (and rated for degree of corrosion on a scale of 1 (like new) to 6 (leaking)) the fittings on 166 representative vehicles (altered Ford E/F Series vehicles and Blue Bird School buses) in multiple regions of the country. Of the 70 vehicles inspected and rated in the non-Salt Belt States, 55 were rated #1 (still looking new with the zinc plating intact), and the remaining 15 were rated #2 (little to no rust showing on the fittings). Conversely, of the 96 vehicles inspected in the Salt Belt States, only 8 received a #1 rating, 45 were rated #2, and 43 were rated either #3 (red rust greater than/equal to 50% of the inspected parts) or higher.

Identification of Any Warning that can Occur : It may be possible to observe a significant amount of red rust on the fuel return line connector fitting prior to any fuel leak.

Involved Components :

Component Name 1 : ¼" fuel return line (Roush)

Component Description : Fuel return line assembly that includes a zinc-plated carbon steel fitting and stainless-steel crimp collar (Roush).

Component Part Number : See MFR Comments to NHTSA (Roush 22E049) and Manufacturer Comments to NHTSA Staff below

Supplier Identification :

Component Manufacturer

Name : Roush CleanTech
Address : 12170 Globe Street
Livonia Michigan 48051
Country : United States

Chronology :

October, 2020: Roush was informed that two Blue Bird school buses in Pennsylvania had experienced apparent corrosion-caused fuel return line fitting failures about three weeks apart.

Roush started to investigate service history, engineering, and supplier quality. Several additional similar warranty claims were reported in 2021.

Spring 2022, Roush had received a total of 19 corrosion warranty claims, with no fires. These claims arose solely in Salt Belt states and involved vehicles with various mileage and manufacturing dates.

Roush began its Salt Belt and non-Salt Belt geographic field and laboratory investigation in 2021. In total, Roush inspected (and rated for degree of corrosion) the fittings on more than 166 representative vehicles as described in the "Describe the Cause" section above. The inspections identified the vehicle make, model, part number, part

location, orientation, mileage, alteration date, geographic location, and route characteristics. Some non-leaking fittings observed with exterior corrosion were dissected to ascertain the extent of any internal compromised metal.

Roush also conducted two types of laboratory salt spray testing. The ASTM B117 salt spray testing varied the orientation of the fittings in the salt test chamber (parallel to ground, perpendicular, 45 degrees, reversed male tube directions). Roush's modified salt spray testing included a road debris pecking simulation. Roush then tested

fittings equipped with additional spiral wrap protection, with braided loom protection, and with a combination of the two protections.

Based on the results of its investigation, in late May 2022, Roush decided to submit a 573.

August 1, 2022: Blue Bird Corporation was notified by Roush of the Safety Recall Campaign for return line fittings.

Description of Remedy :

Description of Remedy Program : Roush will work with Blue Bird and the Blue Bird Dealers to replace the fuel return lines in the recalled vehicles. Roush initially corrected the "Recall Condition" for most of its equipment items sold to independent alterers in late November, 2021, by using a new 5" spiral wrap covered with a 9" braided loom zip tied at each end of the spiral wrap (the "Wrap and Loom protection"). However, Roush anticipates that the purchasers will utilize a newly-designed fuel return line as the recall remedy for in-use vehicles. All parts and material will be supplied by Roush. Applicable servicers will be reimbursed by Roush for all associated labor costs. If the modifications directed by this notification were performed on your bus prior to the receipt of this recall notification, provide a copy of the invoice to Roush CleanTech. Roush CleanTech details will be provide in the recall communication.

How Remedy Component Differs from Recalled Component : The corrective action for vehicles in the field will involve replacing the return lines with a flexible return line that runs from the FRPCM to the tank return valve.

Identify How/When Recall Condition was Corrected in Production : Roush initially corrected the "Recall Condition" for most of its equipment items sold to independent alterers in late November, 2021, by using a new 5" spiral wrap covered with a 9" braided loom zip tied at each end of the spiral wrap (the "Wrap and Loom protection"). However, Roush anticipates that the purchasers will utilize a newly-designed fuel return line, as the recall remedy.

Recall Schedule :

Description of Recall Schedule : Interim Dealer and Owner Notifications are to be issued on or before September 28, 2022.
Parts are unavailable at this time.
Roush will reimburse the labor cost of the repair related to this recall at no cost to the Dealer or to the vehicle owner.

Planned Dealer Notification Date : SEP 28, 2022 - SEP 28, 2022

Planned Owner Notification Date : SEP 28, 2022 - SEP 28, 2022

* NR - Not Reported