



Automotive Vents

FOR DRIVETRAIN & DRIVELINE COMPONENTS

Case History

A Switch To Gore Fixes a Wading Test ‘Fail’ and Keeps an OEM Launch On Schedule

SITUATION

An OEM was preparing for the North American launch of their rear-wheel-drive / all-wheel-drive SUV, which would be offered in multiple powertrain configurations. They planned to use traditional long-tube technology to vent both front and rear axles. This required a different vent-tube routing design for each unique powertrain configuration.

One of these vehicles experienced a wading test failure, which highlighted a design problem with the tube routing. With just a short window to the launch date, the OEM had an immediate need to solve the wading test problem, and to ensure the same problem would not occur in the other new configurations – which still needed to be designed.

CHALLENGE

The OEM was aware of Gore’s reputation for technical expertise in automotive venting, so they asked Gore if they could provide a solution.

For this OEM, the solution needed to address multiple venting-related issues. The wading test failure was the most obvious problem, but there were additional issues, including time limitations imposed by the launch deadline, and cost pressures related to individually venting multiple powertrain configurations.

The wading test failure would demand additional engineering hours to change the initial flawed tubing design, and to re-test and validate the new tube-routing. This effort would then need to be duplicated for each additional powertrain configuration. With the launch date quickly approaching, this expenditure of time was not feasible.

New tubing designs would also incur further expenses: multiple part numbers for vent tubing and anchors for each powertrain configuration, as well as added time and labor costs to route and anchor these complex tube assemblies across multiple powertrains.



SOLUTION

To eliminate wading test failures, and to reduce overall system cost, Gore offered a single solution: GORE® Automotive Vents, Part Number AVS 41/VE2048.

This compact, high-performance water-, dust- and dirt-proof vent was engineered specifically to withstand the environmental challenges of drivetrain and driveline applications.

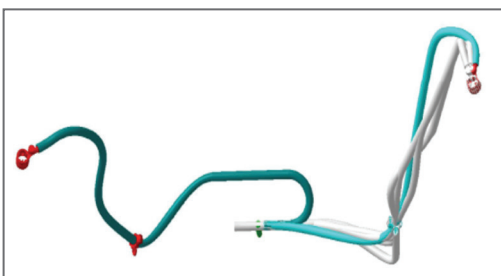
Its rugged construction offers long-term durability, and the combination of pre-filter and GORE™ Membrane ensure it will reliably block contaminants while providing the continuous pressure equalization needed to preserve seal integrity, reducing the likelihood of warranty claims due to premature seal failure.

From “FAIL” to “PASS”

This waterproof tube-mounted GORE® Vent immediately proved its worth: it changed this OEM’s initial wading test from a “fail” to a “pass,” eliminating subsequent engineering re-design time, which got the launch timetable back on track.

“While the wading test result provided a prompt solution to their immediate problem, this OEM quickly saw that this vent offered additional benefits to other areas of their process,” said Steve Mayer, Global Product Specialist for GORE® Automotive Vents for Drivetrain and Driveline Components.

Because it does not need to be installed “above the waterline” it eliminates the time needed to create long, complex tube designs – this GORE® Vent mounts on a short, straight tube that is typically no more than 100 mm long.



DIAGNOSIS:
to develop unique and complex (multi-part) vent-tube designs for multiple powertrain configurations would add unacceptable delays, and higher expenditures.



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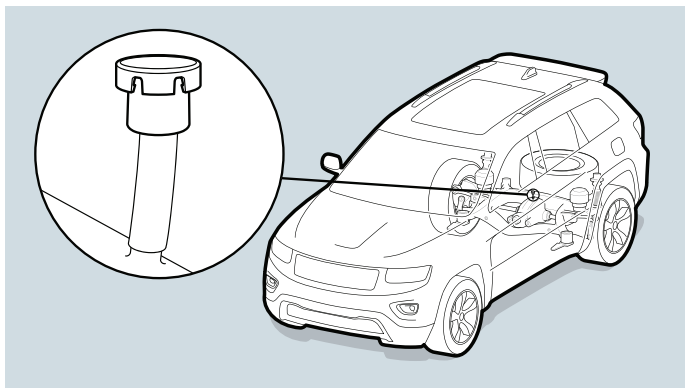
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This compact, space-saving assembly makes it easy to use a single vent design across multiple components or configurations, eliminating the need to constantly design, or re-design, “unique” venting configurations. With only two components – the vent + mounting tube – this reduces labor time for installation, and reduces the quantity of discrete part numbers needed to support vehicle manufacture and service across the entire nameplate.

“As a result,” said Mayer, “this OEM decided that the AVS 41/VE2048 was the best solution for all their axles, both front and rear, and they adopted our product for all the powertrain configurations they were launching.”

While weight-reduction was not an issue for this application, in most cases, replacing traditional vent tubing with this GORE® Vent will also save weight. For example, one vehicle replaced a conventional long-vent-tube assembly (227.1 grams) with Gore’s AVS 41/VE2048 assembly (13.2 grams)...and saved a total of 213.9 grams (.47 lbs.) in the process!



SUV: GORE® Automotive Vent (AVS 41/VE2048)



Protective Cap

- Protects against solid objects

GORE™ Membrane

- Waterproof
- Oleophobic
- Dust/dirt proof
- Breathable

Vent Body

- Provides compact footprint

Pre-filter

- Collects aerosols
- Maintains breathability

Bidirectional Airflow

- Eliminates overpressures and vacuums

FOR MORE INFORMATION

gore.com/products/gore-automotive-vents-for-drivetrain-and-driveline-components

ABOUT GORE

W. L. Gore & Associates is a global materials science company dedicated to transforming industries and improving lives. Since 1958, Gore has solved complex technical challenges in demanding environments – from outer space to the world’s highest peaks to the inner workings of the human body. With approximately 10,000 Associates and a strong, team-oriented culture, Gore generates annual revenues that exceed \$3 billion. www.gore.com

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