Case Study

Weiss Technik designs custom test solutions for durability testing of large vehicle systems

WHY
Support the testing of large vehicle systems, including full-size commercial and consumer trucks. Tests include simulating extreme temperatures, high-pressure water spray to ensure the integrity of door seals and electronic components.

HOW
Two custom large Welded Drive-In Chambers equipped to simulate a full range of climatic conditions and perform high-pressure water spray tests to evaluate door gasket and seal effectiveness.

WHAT
The Large Drive-In Chambers are over 16 feet tall and large enough to accommodate full-size commercial trucks and consumer trucks. They simulate temperatures ranging from -40 to 180°C and humidity levels from 20%RH to 95%RH.

WHY - the challenge.

A multinational automobile manufacturer faced a pressing challenge in maintaining the integrity of their large vehicle systems, particularly concerning water damage through door seals on electronics. This issue necessitates a thorough testing solution to identify vulnerabilities and implement effective mitigation measures. Testing needs include simulating high-pressure wash on an incline, decline, flat, at temp extremes, etc. Additionally, with stringent industry standards and customer expectations for durability and performance, the company sought a comprehensive testing approach that could replicate real-world conditions accurately

HOW - the idea.

Understanding the customer's needs, the Weiss Technik team proposed a solution that involved the design and implementation of two Large Welded Drive-In Chambers. These large welded chambers would provide the necessary space, wider temperature and humidity ranges, and environmental control to conduct rigorous testing, including simulating high-pressure water spray, incline scenarios, and extreme temperature conditions.

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WHAT - the solution.

The Large Welded Drive-In Chambers were engineered to meet the specific requirements of the customer. With dimensions comparable to half a basketball court, and over 16 feet in height, the chambers were large enough to accommodate full-size commercial trucks and consumer trucks. They featured advanced environmental control capabilities, simulating temperatures from -40 to 180 degrees Celsius and humidity levels from 20%RH to 95%RH. Additionally, the chambers allowed for testing of door sealing integrity through high-pressure water spray and incline simulations, ensuring the vehicles' water tightness and durability.

Special Features

- Accommodates full-size commercial trucks and consumer trucks.
- Enables rigorous testing of door sealing integrity through high-pressure water spray and incline simulations.
- Designed for durability testing, including opening and slamming doors millions of cycles without damaging door mechanisms or shattering glass.