

CASE STUDY

Key Market Influence:

Leak testing for battery covers in the e-mobility industry is marked by the need to ensure electric vehicle (EV) battery safety and performance, making precise leak detection crucial. Challenges include keeping pace with rapid technological advancements in battery design and materials, necessitating adaptable and sophisticated testing methods. The booming demand for EVs and strict safety regulations further complicate the testing landscape. Manufacturers face the dual pressure of scaling production while upholding high quality standards, crucial for maintaining competitiveness in the fast-evolving e-mobility market.

Test Requirements:

The test requirements for this customer involve conducting leak tests at a flow rate of approximately **20 sccm** under a pressure of **0.5 psig**. The process necessitates automatic sealing of the parts to ensure consistency and accuracy. Testing is to be performed using **air, comparing a reference part against the testing part** to ascertain integrity. The goal is to achieve a testing throughput of **25 parts per hour**, balancing efficiency with the precision needed to meet the high safety and performance standards of electric vehicle batteries.

VIC Solution:

VIC's solution to the battery cover leak testing requirements in the e-mobility industry is centered around a dual independent chamber system, designed for manual load and unload operations by the operator. This innovative system features automatic part sealing within the chamber, ensuring airtight testing conditions. The core of the system is the F620 instrument, which utilizes air in a differential testing method to precisely detect leaks. This setup is particularly suited for handling the specified testing parameters, including the 20 sccm flow rate at 0.5 psig pressure, while aiming to test 25 parts per hour.



VIC provides this comprehensive system, including the F620 instrument, as a fully integrated solution to customers. This approach not only meets the stringent test requirements for battery covers but also aligns with the high standards of safety and efficiency demanded in the e-mobility sector. The delivery of a complete system ensures that customers have a seamless and reliable testing process, from manual loading to the precise detection of leaks, enhancing the quality assurance of EV battery components.