

PRODUCTION FACILITY BATTERY HOUSING

LEAK TEST XXL

WITH E-MOBILITY COMPONENTS



It was predictable that the massive changes due to the demanded mobility transformation will also affect the industry's conventional leak testing. Together with our customer we did the next step heading towards future mobility in different projects. The task was to integrate a leak testing facility into the existing manufacturing process. The leak test was carried out by using the mass flow procedure (air testing) and the leak detection in the case of NOK-parts via helium sniffing method (gas testing).

The characteristic of these projects was not only the timeliness of the topic, but also in the dimension of the component parts: With corresponding size these battery housings demanded a completely new mindset in all process steps and challenged our engineers consistently in the course of the project: How is it possible to reliably seal such a massive component part if the seal production can't set up rubber seals with a length of ca. 6.5 m in one part?

The solution of this challenge lay in the development of a special connection system for the realization of very long, closed seals. Also, the component handling via vacuum gripper system by robot and the in- and outward transfer of the XXL part needed a detailed coordination which led to conclusive general concepts.

SOME INDIVIDUAL OPERATIONS AT A GLANCE



part loading with special rack



application of a handling-robot with vacuum gripper system



air leak test with small test pressures



integrated maintenance mode for changing the upper sealing plate



loading rework-part on special handcart



handing over the OK-part for the next operation



outward transfer of NOK-parts via shuttle



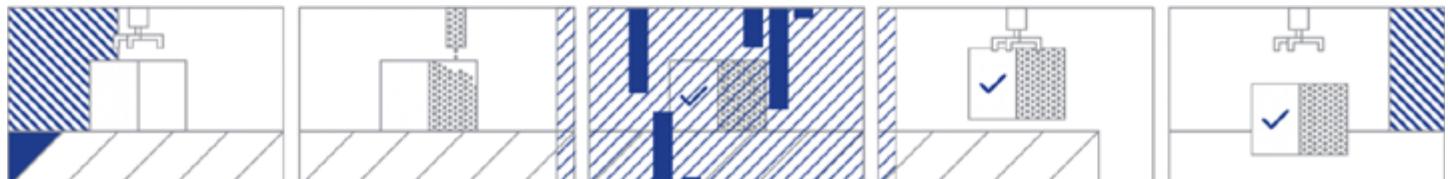
leak detection using helium

THE PROJECT IN FIGURES

Because of the huge component volume, the mass flow testing method was selected in this project. Though the high sensitivity for temperature influences played a decisive role, too. In addition, the difficulty of accurate sealing, which was solved by the development of a special connection system, made this project exceptional.

Facts

- component size analog vehicle platform
- longest sealing contour with a length of ca. 6.5 m, consisting of 11 single pieces
- integrated maintenance mode for changing the upper sealing plate



INDIVIDUAL OPERATIONS IMPLEMENTED

At first glance, the list of the individual operations implemented in the core areas of leak testing and automation appears very short, compared to other projects. However, if you look at them with the size of the component and the corresponding challenges in your mind, the intensive development work of this project quickly becomes apparent. At the same time, our project gives an idea of how far-reaching and exciting the effects of the new drive technologies will be on the future work of an entire industry.

Automation

- automatic removal of components from transport racks
- use of handling robots with vacuum gripper system
- outward transfer of NOK-parts via shuttle
- interlayer handling

Leak testing

- leak testing by air using the mass flow procedure including an integrated maintenance mode for changing the upper sealing plate
- manual leak detection via helium sniffing method



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CONTACT

ARE YOU FACING SIMILAR CHALLENGES?

We would be happy to advise you on comparable projects and answer any questions regarding our reference cases.