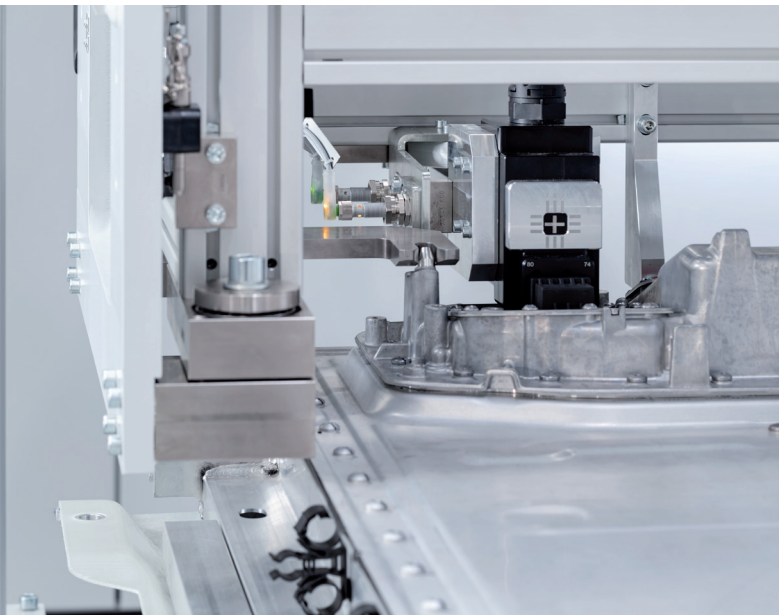




Functional and leak testing of high-voltage batteries

A robust test stand design for a German OEM

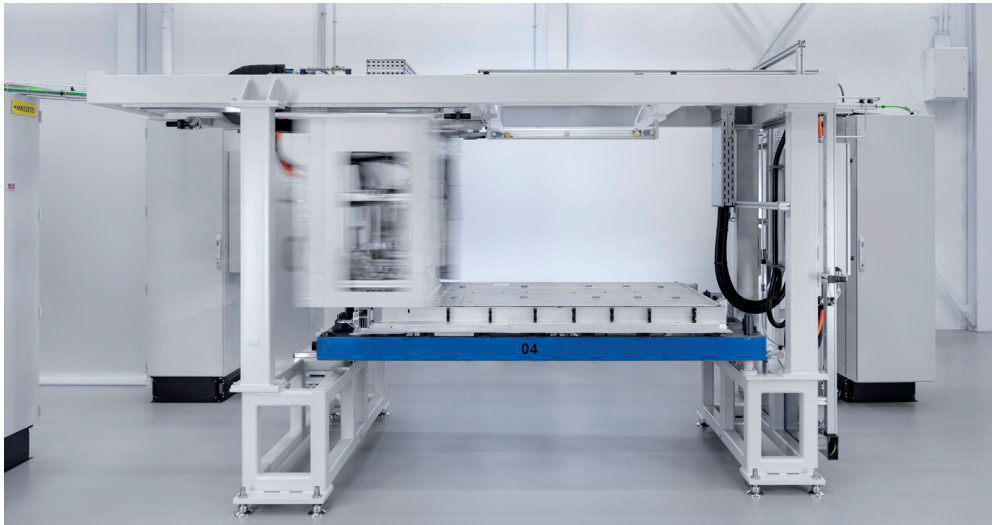


Expertise in automated testing

The final quality assurance is an essential part of the production of high-voltage (HV) batteries to ensure safety. This is why a German car manufacturer commissioned JW Froehlich with designing functional and leak test stands for the end of the HV battery production line at the client's factory in China. While the other stations of the assembly and test field were almost exclusively provided by Chinese companies, when it came to the test stands, the client went for the expertise of a mechanical engineering company from Germany. JW Froehlich was able to meet the client's exacting requirements within a very tight timeframe. Consistent with the German company's typical performance, the test field, consisting of four leak test stands for battery packs including cooling circuit and six EOL functional test stands went into operation on schedule.

JW Froehlich is where decades of experience with the development of highly complex test stands meet extensive e-mobility expertise. Our test systems are developed and customised in close consultation with our clients to meet their exact requirements. The combined technological know-how of our in-house experts and cooperation partners enables the development of complete, user-oriented testing solutions. The result is a one-stop-shop for the total design, simulation, implementation and on-site commissioning.

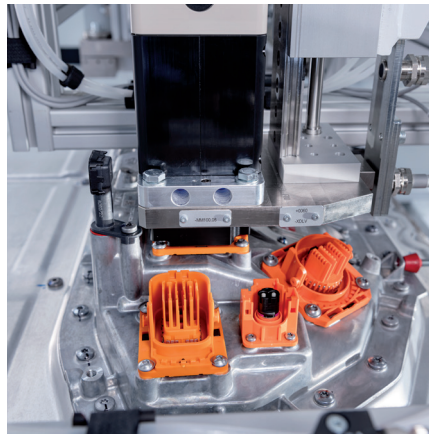
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Leak testing

Using a high-resolution mass flow method, the unit tests the battery pack, and using a differential pressure method, it performs a leak test of the cooling circuit.

The state of the battery is continuously monitored and assessed during testing.



The functionality test starts once both HV and LV connections have been made. For the alignment and connection process the system allows for the battery manufacturing tolerances.



Functional test

The test station is able to safely test up to 1,000 HV batteries per day. The restbus simulation provided by the client was integrated into the test station. The function test, including establishing communication with the control unit via the LV connector to initialize the battery, was carried out once the leak test had been concluded. JW Froehlich's EOL unit then went on to simulate a charge/discharge and load profile determined by the client in order to test the function of the batteries under various load conditions.

Test scope

Leak testing

High-voltage safety tests | low-voltage tests

Bidirectional load test up to 300 kW

Safety function and defeat device tests

Have we piqued your interest?

For questions about the project and its technical details, please refer to your direct contact:

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