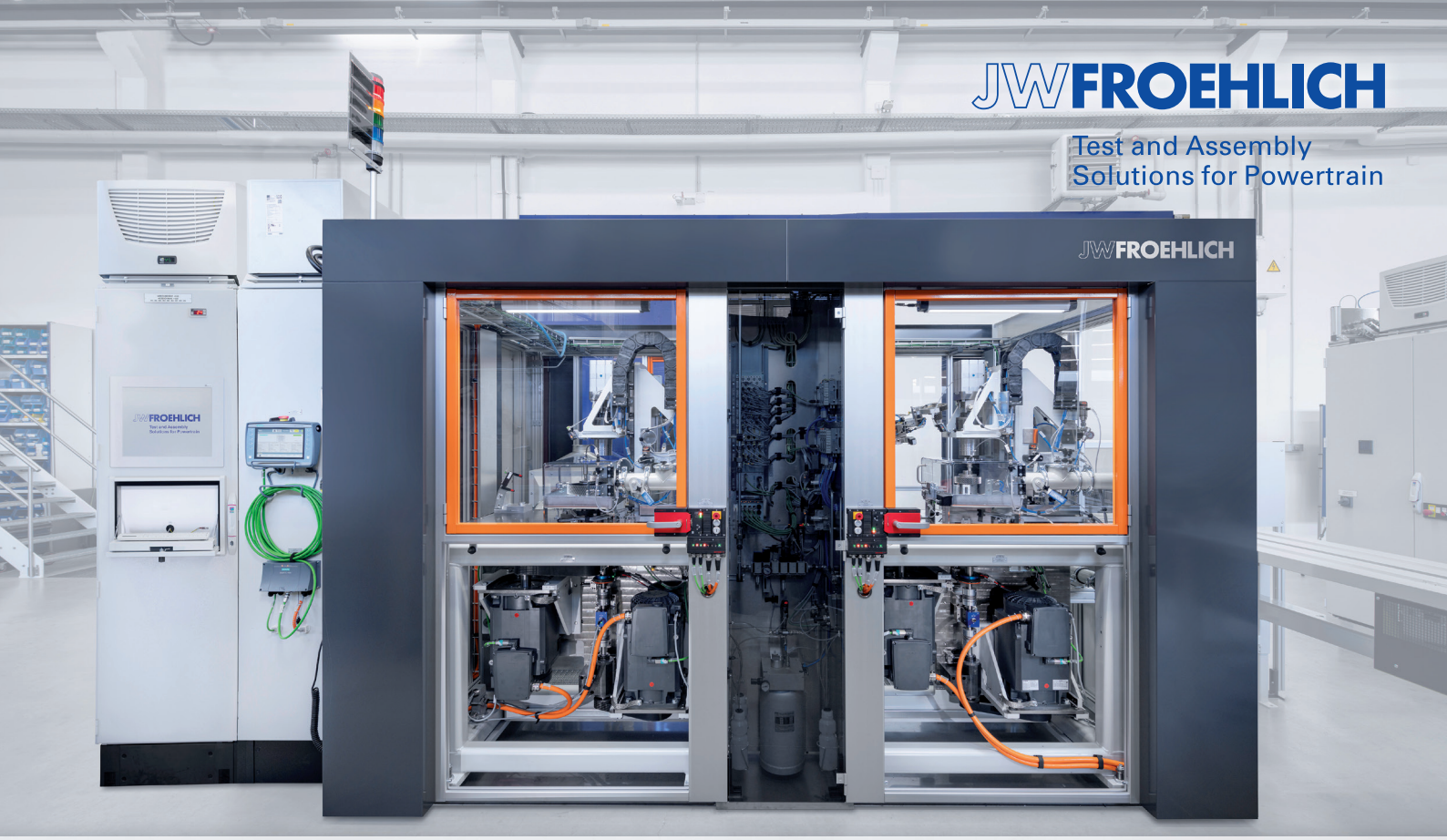
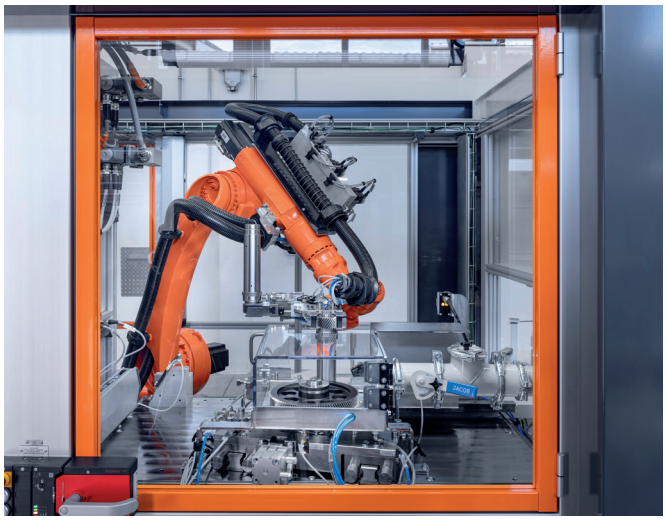
JW FROEHLICH

Test and Assembly
Solutions for Powertrain



Single-flank testing for electric drive gears

System for precise defect detection during the build



Challenging automation project

The client asked JW Froehlich to develop a test system that detects defects on gears while they are still on the production line. JW Froehlich's concept is based on an NVH measurement that uses sensors to detect deviation in vibrations. The flexible solution can be quickly and efficiently integrated into existing production lines and enables the smallest defects to be identified that conventional quality inspections normally do not cover, such as micro-geometry defects on gear flanks

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.

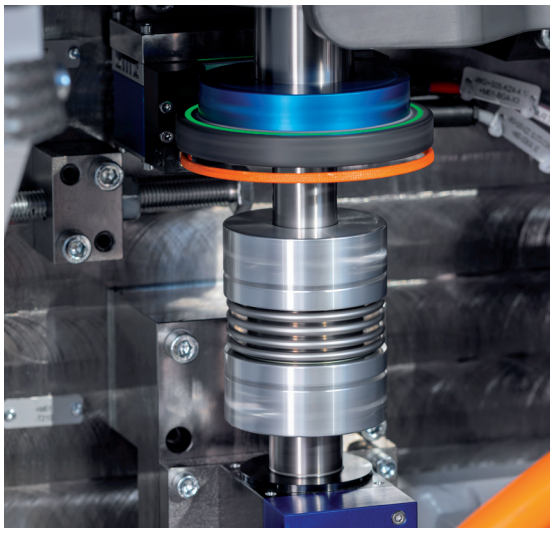
Single-flank testing for electric drive gears

Direct acoustic detection

JW Froehlich favours Discom's complete system for measuring noise development. While conventional methods can only record the noises made by the test parts indirectly, here the measurement takes place directly while the gear is rotating. A torsion acceleration sensor records the angular acceleration. Based on this measurement, the system provides precise information that indicates possible damage or contact surface defects.

Fully automated test part change

Once the test is complete, a robot equipped with a double gripper picks up the gear wheel and immediately inserts the next test part into the system's clamping device. The test part change is fully automated. Torque and rotation speed values can be adjusted flexibly to achieve a realistic simulation.



A robust design with repeatable geometry in the gear contact, reliable vibration isolation and high-precision mandrels are crucial for a successful test run. Their many years of expertise have allowed JW Froehlich to meet all the client's technical requirements to their satisfaction.

Test characteristics

- Designed for maximum rigidity and repeat accuracy
- Torque and rotation speed flexibility
- Decoupling the measuring sensors from the drive components
- Master wheel positioning and sensors to avoid collisions
- Ergonomic and user-friendly master wheel change

Have we piqued your interest?
For questions about the project and its technical details, please refer to your direct contact:

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