

# MAHLE Electric Drives Slovenia and Kambič

## Kambič – Equipment for Precise Environmental Testing

Kambič is a family-owned company with over 40 years of tradition in the development, production, assembly, and testing of sophisticated laboratory and process equipment.

Our products, solutions, and services are present in all industrial sectors that rely on applications with precise control of temperature, relative humidity, pressure, vacuum, or gas concentrations (N<sub>2</sub>, O<sub>2</sub>).

Our team of specialized development engineers, test engineers, and skilled assemblers enthusiastically tackle new challenges and the evolving demands of the market, primarily in the field of test equipment and demanding process applications.

The team is complemented by over 50 external partners and representatives in more than 40 countries worldwide.

### A PARTNERSHIP FOR ADVANCED VALIDATION AND DEVELOPMENT

**MAHLE Electric Drives Slovenia d.o.o.**, based in Šempeter pri Gorici, is one of the leading manufacturers of electric motors, fans, and mechatronic components for the automotive industry in the region. With nearly 2,000 employees and in-house R&D, the company plays a key role within the MAHLE Group, especially in the field of e-mobility.

Since **2018**, MAHLE's technical laboratories in Šempeter have relied on **Kambič** environmental simulation equipment. Today, the site operates more than **20 units** used for development, validation, and quality control purposes.

### A WIDE RANGE OF TESTING UNDER DEMANDING CONDITIONS

Kambič chambers are used for testing individual components and fully assembled products, including:

- **servo motors,**
- **battery cooling fans,**
- **alternators and starters,**
- **electronic modules, and**
- **traction motors.**

Testing includes long-term cycles, extreme temperatures, and real-world environmental simulations.

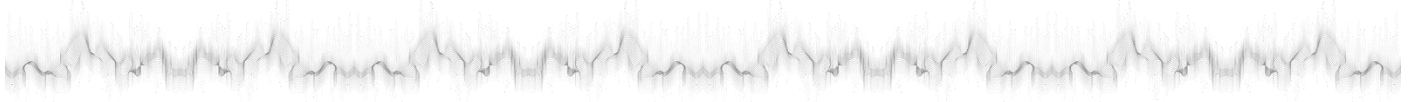
The chambers enable the following performance characteristics:

- a temperature range of **-75 °C to +180 °C,**
- **5-98%** relative humidity,
- heating and cooling rates up to **10 K/min.**



## EFFICIENT TESTING WITH “BACK-TO-BACK” MOTOR CONFIGURATION

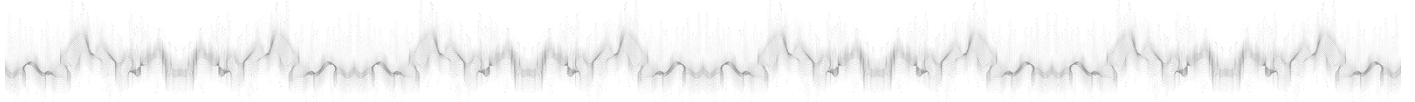
A notable example is testing motors in a “**back-to-back**” setup. Here, two motors are connected directly – one drives and the other acts as a load. In this way, the motors work against each other, so only the energy losses in the system need to be supplied. This makes the testing much more **energy efficient**. Even when the motors face high mechanical and heat demands, the chambers keep the **testing conditions steady**, helping to ensure accurate results and show how the motors will work in real life.



## VALIDATION, QUALITY, AND FASTER TIME TO MARKET

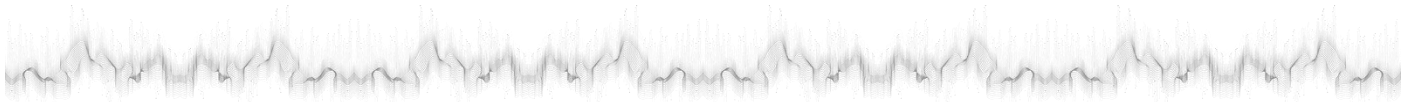
**Reliable test equipment** means fewer problems and mistakes in production, as well as **faster development** of new products and **quicker time to market**. It also helps with thorough checking (validation) of products against technical specifications and customer standards.

To ensure long-term reliability and high performance, the testing team calculates and defines the extreme conditions that products will face. By simulating these extremes in carefully controlled cycles, they can accurately assess the expected lifetime and durability of motors and other critical components. This reliable testing supports MAHLE in keeping up its high **product quality and strong performance**.



## FINDING SOLUTIONS TOGETHER

Kambič supports MAHLE’s development and production by providing **reliable equipment, fast service, and in-depth technical advice**. In projects like these, there are often unique challenges and requirements that cannot always be met exactly as planned. However, by **working together and sharing ideas**, Kambič and MAHLE find practical solutions and improvements that keep projects on track. This open and collaborative approach ensures a strong partnership that delivers **great results** for both companies.



## TRUST, EXPERTISE, AND RELIABILITY

The partnership between MAHLE Electric Drives Slovenia and Kambič shows what is possible when a **global automotive supplier** and a **trusted local testing equipment provider** work together. Their mutual respect, technical expertise, and shared dedication to quality create a solid foundation for reliable testing and faster development of new products. This cooperation not only improves processes and equipment, but also supports the future of electric mobility.