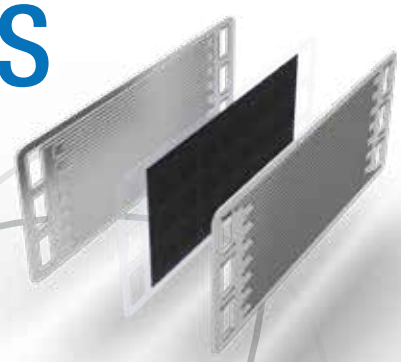
MARPOSS

LEAK TESTS IN THE PRODUCTION OF FUEL CELLS

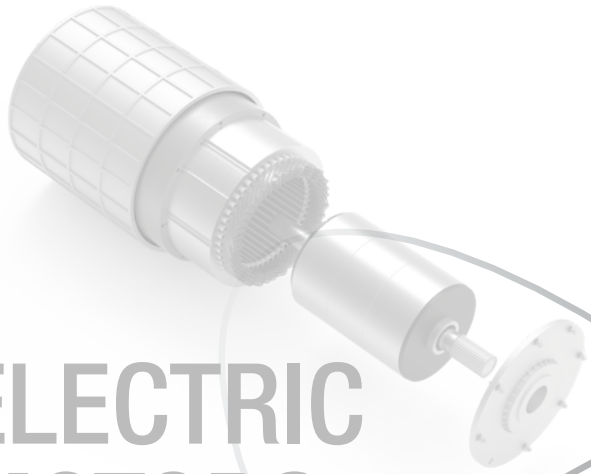
MARPOSS OFFERS MEASUREMENT, INSPECTION AND TESTING SYSTEMS FOR ALL PRODUCTION AREAS OF THE ELECTROMOBILITY INDUSTRY

FUEL CELLS



ELECTRIC MOTORS

FOR HYBRID AND ELECTRIC VEHICLES



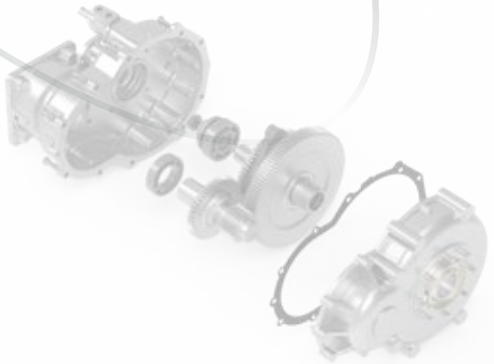
SAFETY

QUALITY

RELIABILITY

TRACTION BATTERIES

GEARBOX

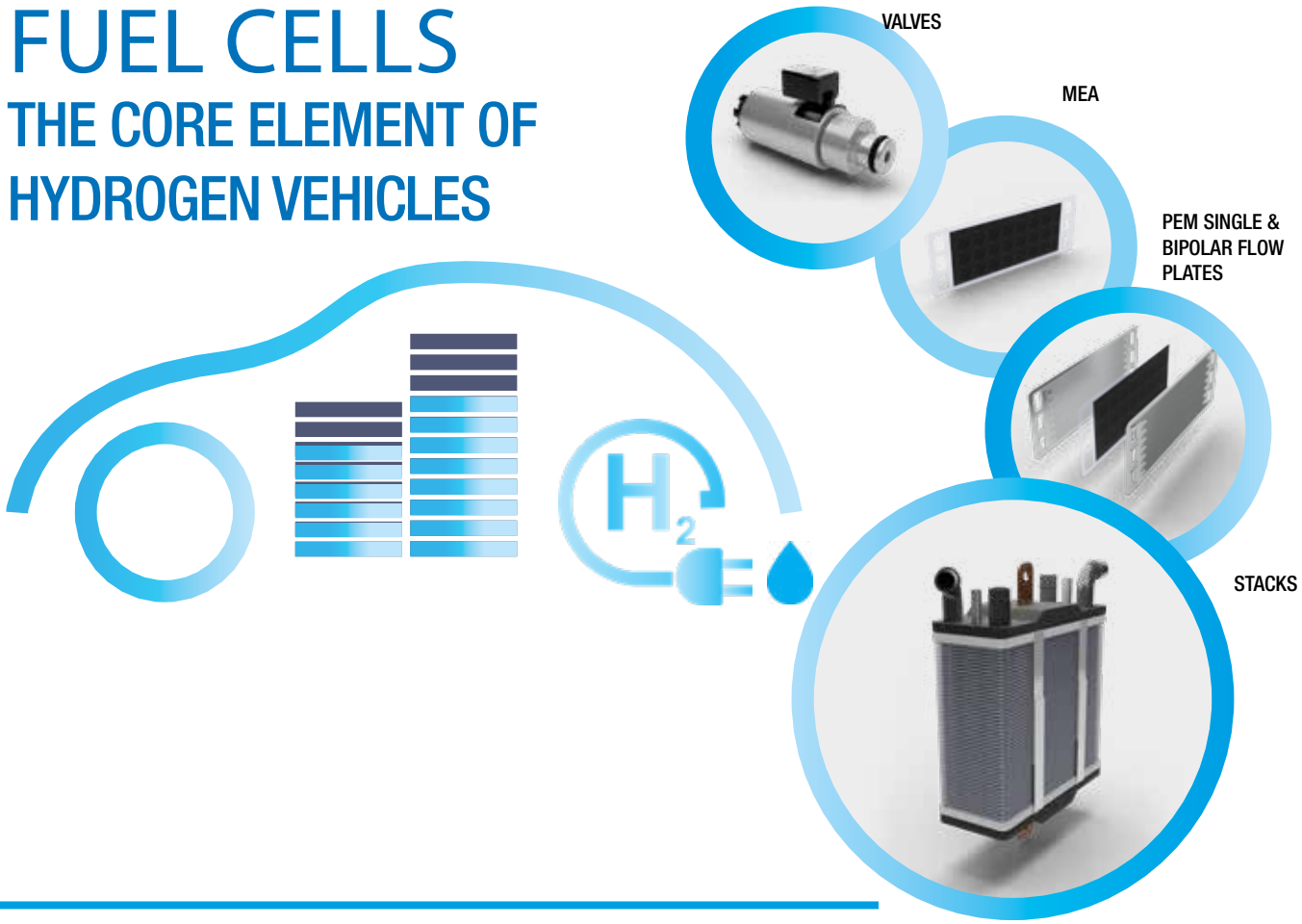


YOUR GLOBAL PARTNER FOR MEASURING, INSPECTION AND TESTING SYSTEMS

MARPOSS

FUEL CELLS

THE CORE ELEMENT OF HYDROGEN VEHICLES



Leak Testing technology applied systematically in the production process helps to meet the high-quality requirements for Fuel Cell Systems.The technology, either in mobile or stationary use, allows to:

- AVOID DEFECTS
- Meet the demands for SAFETY and PERFORMANCE

Marposs provides a vast portfolio of application to verify the Fuel Cells components and the balance of plant. No matter if the test has to be performed with single components, for instance flow & bipolar plates, valves, or with integrated stack.

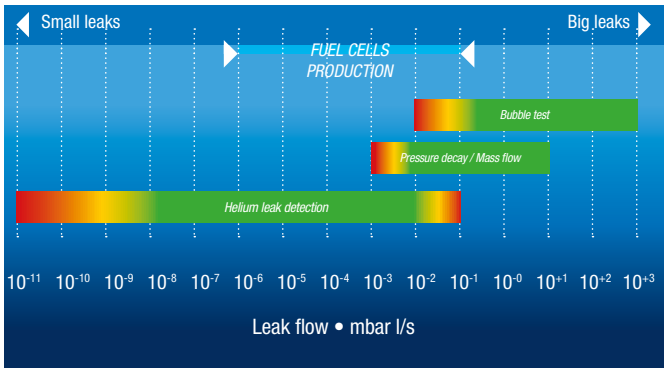
Marposs has the widest range of flexible solutions related to:

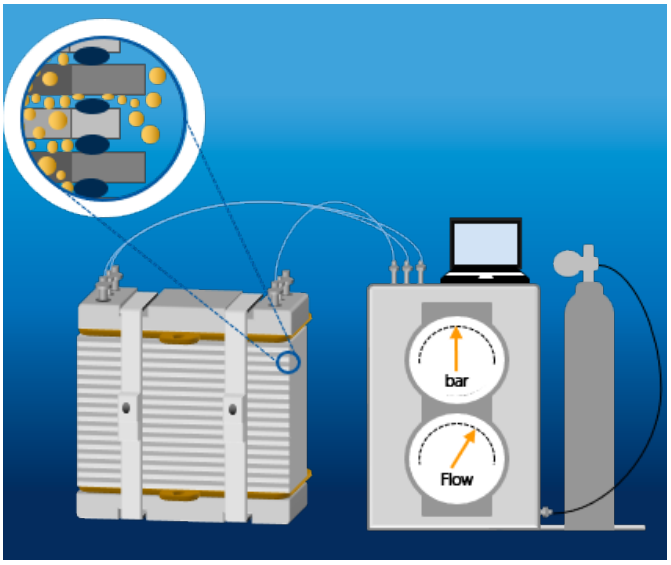
- Test pressure
- Reject limit
- Free volume
- Cycle time

From single measurement devices for pressure decay and flow test by using air to helium leak test in vacuum or accumulation chamber.

Leak test in the complete production chain:

- Air leak test – Pressure decay flow
- Helium leak test in vacuum chamber
- Helium sniffing
- Helium recover





Stack-Leaktest

LEAK TESTS IN THE PRODUCTION OF FUEL CELLS

AIR LEAK TEST APPLICATION FOR FUEL CELL

The tailored application verifies the tightness of the electrochemical system, either to the system itself or towards the outside, simulating real operating conditions.

- Customized solutions
- Manual or fully automated
- Leak tests with full scale up to 30 bar and in vacuum
- Resolution of measuring device 0,1 Pa

LEAK AND FLOW TESTER

The device allows the immediate detection of any defective part that would jeopardize quality standards, generate non-conformities, waste time and money.

- Pressure Decay
- Absolute or Differential Pressure method
- Flow
- Calibrated Leaks

AUXILIARY

Other standard and tailored systems complete the supply range.

- Helium Recovery systems
- Assembly
- Automation

HIGH PRESSURE HELIUM LEAK TEST FOR HYDROGEN VALVES/BALANCE OF PLANT

The tailored solution verifies the tightness against a dangerous gas at very high pressure, simulating real operating conditions.

- Vacuum Chamber
- Helium Sniffing
- ~ 10^{-5} mbar l/s
- Test pressure up to 450 bar

HELIUM LEAK TEST FOR SINGLE AND BIPOLAR FLOW PLATES

The application checks the tightness of Coolant, Hydrogen and Air circuits (total no. 3) of the Fuel Cell Bipolar Plates, simulating real operating conditions.

- Vacuum Chamber
- Helium Sniffing
- ~10^{-5} / ~10^{-3} mbar l/s
- 1,7 bar test pressure
- High productivity

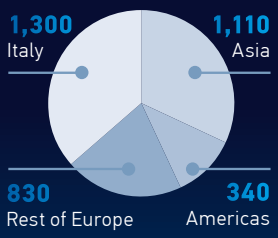
MEASUREMENT, INSPECTION AND TEST FOR QUALITY AND PROCESS CONTROL

worldwide present in
34
countries

offices worldwide
80

exports
94%

approx.
3,500
employees



30
key acquisitions since 2000

8%
resources invested in R&D

Marposs was founded in 1952 and since then has provided shop-floor solutions for the quality control in the production environment. Marposs' solutions include gauging equipment of mechanical components, before, during, and after the production process, monitoring solutions on machine tools, assembly, and testing systems, automatic machines, and checking stations for production lines.

Marposs is one of the main suppliers of the top automotive manufacturers, but operates as well in the aerospace, biomedical, hi-tech, and glass industries.

Marposs Group's employees are more than 3500, located around the world, with presence in thirty-four countries with more than eighty sales offices.

MARPOSS
www.marposs.com

For a full list of address locations, please consult the Marposs official website

Marposs has an integrated system to manage the Company quality, the environment and safety, attested by ISO 9001, ISO 14001 and OHSAS 18001 certifications.