

Poppe + Potthoff Maschinenbau GmbH
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Nordhausen, March 18, 2019

PRESS INFORMATION

E-Mobility Testing Systems for Media-Carrying Components

Test benches from Poppe + Potthoff Maschinenbau facilitate the validation of products for electromobility. Hoses and valves, pipes or housings are tested for their reliability at varying flow rates, pressures and temperatures. In addition, the performance and efficiency of pumps, control valves or cooling and heating systems can be monitored over the entire life cycle in low or high voltage operation.

Media-carrying components and systems are essential for electromobility, especially for thermal management. To ensure suitability and optimize quality, the components are subjected to rigorous testing. Poppe + Potthoff Maschinenbau's test benches have been designed to simulate typical working conditions and deliver very accurate measurements over the entire life cycle of the product.

At temperatures ranging from -40°C to +140°C the flow rate of the test medium (water glycol mixture or pure glycol, e.g. Glysantin G40, G44 or G48) can vary from 1 to 50 l/min at a pressure of 0.2 to 12 bar or higher. The load changes are freely programmable with sinusoidal or trapezoidal rise at a test frequency of 0.2 to 2 Hz or faster. This allows for reliable and highly efficient endurance testing within days.

Pressure cycling and function testing

In addition, Poppe + Potthoff Maschinenbau offers function test benches for electrical appliances such as cooling and heating units, control valves, pumps, etc. At alternat-

ing temperatures, power consumption and performance are tested – optionally with low or high voltage power supply to simulate operation via on-board battery and generator (0 to 20V_{DC} / 5A) or the traction accumulator (0 to 600V_{DC} / 150A).

The temperature at the inlet and outlet of the test object is measured, as well as the flow rate, pressure and pressure drop, current and voltage in the high and low voltage range. Optionally, an environmental simulation can be generated in all test stands by using a climate chamber. A specially developed closed test media circuit prevents the formation of potentially explosive alcoholic vapors by means of pressure.

The integrated LabView software from National Instruments enables efficient data acquisition and visualization. All test procedures and data are automatically stored on the system and can be exported to the network for evaluation. The open software structure makes it possible to integrate additional sensors and data during testing. Also, part of the package, Poppe + Potthoff Group can provide numerous testing services, remote maintenance and on-site technicians.

2611 characters incl. Blanks, 398 words

Keywords: Testing technology for media-carrying components / Climate control components / Thermal management / Energy efficiency

Photos:



Fig. 1: Test stands from Poppe + Potthoff Maschinenbau validate media-carrying components and thermal management systems that must withstand maximum loads at temperatures of -40°C to +140°C. Source: [iStock](#) Photo No. 816704262 (edited)



Fig. 2: Pressure cycling test stands from Poppe + Potthoff Maschinenbau can be equipped with a climate chamber (as shown here) for environmental simulation.

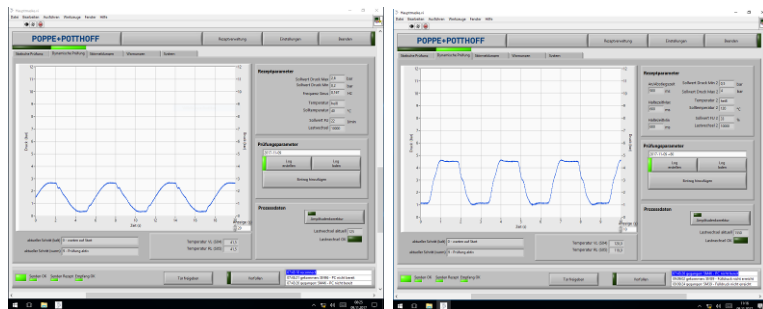


Fig. 3a/c: Pressure cycling test benches from Poppe + Potthoff Maschinenbau test media-carrying components at -40°C to $+140^{\circ}\text{C}$. Temperature, volume flow and pressure changes can be freely programmed in sinusoidal and trapezoidal form at a test frequency of e.g. 0.2 to 2 Hz and enable fast and economical testing.



Fig. 4: The Poppe + Potthoff Maschinenbau function test bench measures the energy consumption and performance data of heating and cooling units under changing temperature conditions so that their efficiency can be optimized.

Source (unless otherwise stated): Poppe + Potthoff; Download in print quality: [Download ZIP](#) or via press.info@oha-communication.com

Poppe + Potthoff Maschinenbau GmbH develops and produces test benches and special machines for research, development and production in the automotive, ship-building and other industries. This includes test benches for measuring burst pressure, leak tightness and fatigue strength, for impulse testing up to 6,000 bar, for au-

tofrettage as well as for functional testing of media-carrying components and systems in vehicles with electric, hydrogen, LPG, petrol or diesel engines. Based in Nordhausen (Germany), the company is a member of the Poppe + Potthoff Group and serves the automotive and heavy-duty industries worldwide.

Poppe + Potthoff stands for precision. The group develops and manufactures customer-specific steel tubes, common rail subsystems, high pressure tubes, precision components, line shafts, couplings as well as specialized test stands and other machines. Poppe + Potthoff enables highly sophisticated solutions in automotive engineering and shipbuilding, machine tool building and mechanical engineering as well as other industries. The family-owned enterprise with its headquarters and technology center in Werther (Germany) was founded in 1928 and has more than 1,700 employees. Poppe + Potthoff is active in more than 50 countries with its subsidiaries and long-term partners – always in close contact with its customers. www.poppe-potthoff.com

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