

Visit Poppe + Potthoff:

>> June 18-20, 2024, Battery Show, Stuttgart, Germany

>> October 07-10, 2024, Battery Show, Detroit, USA

>> October 22-24, 2024, Hydrogen Technology Conference & Expo, Hamburg, Germany



Nordhausen, Germany, June 12, 2024

PRESS INFORMATION

Liquid-Cooled Server Components Put to the Test

Poppe + Potthoff delivers test stands for the validation of colocation cooling systems

Efficient cooling of server racks (colocation) is crucial for data centers in order to ensure the performance and longevity of the hardware. Liquid-cooled systems are becoming increasingly important in this respect. Poppe + Potthoff Maschinenbau (PPM) develops test benches to examine and optimize the quality of cooling components and systems.

According to current forecasts by the International Energy Agency (IEA), data centers will consume more than 800 terawatt hours of energy worldwide by 2026 - more than twice as much as in 2022. Liquid cooling systems help to improve power usage effectiveness (PUE). They are up to 40% more efficient than conventional air cooling and make a significant contribution to reducing energy consumption and costs.

Direct liquid cooling (DLC)

DLC systems are considered to be particularly efficient. The coolant is in direct contact with heat-generating components in the server rack, which ensures very effective heat dissipation. This method enables high-density data centers, as DLC systems are very compact. As they can cope with higher temperatures than air cooling, fewer fans are required. This not only reduces power consumption and costs, but also noise pollution.

Leakage-free from the CDU to the cold plate?

To prevent damage caused by leaks, all media-carrying components of the DLC system must meet the highest requirements in terms of strength and tightness - also with changing pressures and temperatures. These include the coolant distribution units (CDU), connectors, valves, lines and the cooling plates, inside which the coolant circulates through microchannels. These are installed directly above the heat-producing components such as CPUs and GPUs.

Test benches from Poppe + Potthoff Maschinenbau

To test the mechanical strength and tightness of DLC components and systems, the German company PPM offers test benches for burst and leak tests up to 70 bar (1100 psi) as well as dynamic pressure pulsation tests of up to 20 bar (290 psi). Higher pressures and water hammer tests can also be realized. With sinusoidal and trapezoidal curves in frequencies of up to 2 Hz, all operating conditions can be comprehensively simulated over the service life.

Validation under real conditions

Testing is carried out with water-glycol emulsions or other coolants such as PG25. The media and ambient temperatures in the temperature-controlled test chambers usually vary between -20°C and +90°C (-4°F to +194°F). The simulation of real operating conditions in PPM's test benches makes it possible to minimize failure risks and costs and to ensure optimum performance of all components of the cooling system in interaction.

(2794 characters incl. spaces, 431 words)

Images:



Fig. 1: Components for liquid-cooled systems in data centers are tested with the pressure cycling test bench from Poppe + Potthoff Maschinenbau.

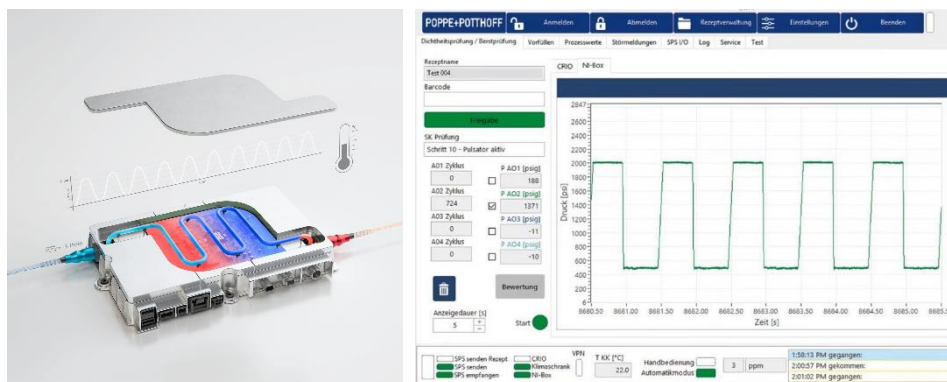


Fig. 2: With Direct Liquid Cooling (DLC), the liquid in the cooling plate transports the heat away very effectively. Fig. 3: The mechanical strength and tightness of the cooling system components are tested by pressure changes with a trapezoidal or sinusoidal curve.

Image source: Poppe + Potthoff

In print quality: [Download](#) 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, shipbuilding 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 autofrettage 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

The Poppe + Potthoff Group, with its headquarters and technology center in Werther (Westphalia, Germany), has more than 1,600 employees and long-term partners in over 50 countries. Founded in 1928, the company today has 18 plants and sales offices in 9 countries. Each location has its own area of expertise, all of them focusing on the requirements of each individual customer, for whom they contribute to sustainable and environmentally friendly technologies and drive the digitalization of processes.

Poppe + Potthoff is a partner of globally active companies in various technically demanding industries such as the automotive industry, mechanical engineering, marine and aerospace. The product portfolio includes common rails, precision steel tubes, high-pressure pipes, precision components, precision and industrial couplings and specially developed test systems. With innovative hydrogen supply systems and components for electric vehicles, Poppe + Potthoff is contributing to an emission-free future for mobility and industry. www.poppe-potthoff.com

Contact Marketing:

Bastian Drexhage

Poppe + Potthoff GmbH

Marketing & Communication

Phone: +49 5203 9166 276

Mobile: +49 171 621 7009

E-Mail: bastian.drexhage@poppe-potthoff.com

Internet: www.poppe-potthoff.com

Contact PR Agency:

Oliver Frederik Hahr

oha communication

Consulting in International Public Relations

Phone: +49 (0)711 / 50 88 65 82-1

Mobile: +49 (0)176/ 51 22 22 88

E-mail: oliver.hahr@oha-communication.com

Internet: <https://oha-communication.com/client/poppepotthoff/>