

Busch Group Presents Vacuum Solutions for Scalable Hydrogen and Carbon Capture Applications

MAULBURG, GERMANY, January 7, 2026 /EINPresswire.com/ -- Scaling hydrogen and carbon-capture technologies requires vacuum equipment that performs reliably under real-world industrial conditions. The Busch Group, one of the world's largest manufacturers of vacuum solutions, presents an extensive range of vacuum, overpressure, and leak detection systems under its two well-known brands, Busch Vacuum Solutions and Pfeiffer Vacuum+Fab Solutions. These solutions support hydrogen generation, storage and usage as well as CO₂ separation and compression in capture processes.



Vacuum technology from Busch enables safe, efficient hydrogen manufacturing and CO₂ capture for a sustainable energy future. Image source: Stock-Foto

Vacuum technology for safety, efficiency, and long-term stability

In hydrogen manufacturing, storage and usage, vacuum and overpressure systems – along with leak detection technologies – are critical for ensuring safety, efficiency, and integrity across the hydrogen ecosystem. Busch and Pfeiffer offer a comprehensive product portfolio that covers the entire hydrogen value chain, maintaining proper gas flow and pressure for reliable system performance. The extensive range of leak detectors and leak test modules from Pfeiffer provide ideal solutions for leak testing electrolyzers, storage tanks, pipelines and components. These systems detect and prevent hazardous leaks, validate the tightness of components such as fuel cell bipolar plates before assembly, and meet regulatory requirements for gas tightness. Designed for robustness and integration, they allow fast cycle times and can be tailored to specific process needs. Portable versions are available for on-site leak testing of tanks and pipelines to ensure safe hydrogen transport and storage.

Oil-free hydrogen recirculation for enhanced fuel cell performance

For clean and reliable gas flow in fuel cell systems, Busch offers the oil-free [MINK MH hydrogen recirculation blower](#). It plays a central role in fuel cell operation by recirculating unused hydrogen back into the stack. This increases the efficiency of the fuel cell and extends its service life. The MINK recirculation blower ensures optimal hydrogen recirculation for fuel cells of up to 45 kilowatts and can be used in systems up to 60 kilowatts with a lower recirculation rate. Multiple blowers can operate in parallel for larger fuel cells. Compact in design, the blower can be installed directly within the fuel cell module and features an intelligent variable speed drive that automatically adjusts flow volume to real-time demand, achieving maximum efficiency.

Vacuum equipment for carbon capture applications

In carbon capture and utilization processes, vacuum technology determines how efficiently CO₂ can be separated, purified, and prepared for reuse or storage. The MINK MW claw vacuum pump from Busch delivers continuous vacuum generation for CO₂ extraction and regeneration, providing dry, energy-efficient and cost-effective operation. For process monitoring, [Pfeiffer GSD 350 mass spectrometers](#) offer real-time analysis of process gas composition, enabling precise control of capture efficiency. In addition, complete vacuum and overpressure packages are available for lab, pilot, or industrial environments where integrated process control is required.

Florian Held

Busch Vacuum Solutions

+49 7622 6813376

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