Press release

**EcoCvario – innovative all-rounder for water-based fine cleaning**

**Fast, economical, and sustainable for high purity**

**With the new EcoCvario, Ecoclean has developed a highly flexible solution for water-based precision cleaning. The modular concept allows different cleaning technologies and drying processes to be combined and adapted to individual requirements in such a way that high cleanliness specifications can be met reproducibly, quickly, and sustainably. In addition, innovative equipment details, effective heat management, optimized media flow, and efficient media treatment contribute to cost- and resource-saving processes.**

Increasing quality requirements are leading to more demanding cleaning tasks with high cleanliness specifications across all industries. This is regardless of whether mass-produced parts are to be cleaned as bulk goods or precision parts as set goods. These applications require application- and customer-specific fine cleaning processes, for which Ecoclean has developed the new EcoCvario. The powerful spray-flood cleaning system with a vacuum-tight working chamber is designed for batches weighing up to 150 kg and measuring a maximum of 650 x 470 x 400 mm and is equipped with three flood tanks as standard. Its compact footprint and wide range of automation options also make it ideal for seamless integration into the production chain.

**It's all in the combination**

By using various cleaning technologies that can be combined as desired, this innovative all-rounder can be adapted to a wide range of requirements. For example, the pulsated pressure cleaning (PPC) pressure change process enables contaminants to be reliably removed from complex internal geometries, fine capillaries, narrow undercuts, deep bores with small cross-sections, or the delicate structures of printed components. With power-controlled ultrasound at different frequencies, individual vibration units can be selected or deselected depending on the application and parts. For stubborn contamination, high-pressure cleaning comes into its own. Gentle flooding ensures that delicate and sensitive components emerge from the cleaning system clean and undamaged, in line with requirements. The rinsing function of the working chamber via additional nozzle bars reduces carryover to a minimum.

The EcoCvario also offers comparable flexibility when it comes to drying: equipped with combinable hot air and vacuum drying, optimal results are achieved in every case with minimal energy consumption and the shortest possible time. This is supported by sensor-controlled moisture measurement and monitoring integrated into the working chamber. HEPA filters for treating the supply air during hot air drying prevent recontamination of the cleaned parts.

**System technology designed for high cleanliness**

In addition to the combination of cleaning and drying processes, the system technology supports high cleaning quality. This includes the working chamber made of polished stainless steel and the media-carrying pipes welded using special processes that counteract deposits. The bogie integrated into the working chamber with frequency-controlled drive ensures precise positioning of the components and optimum accessibility of media and process mechanics. The flood pumps, which are also frequency-controlled, ensure fast filling and emptying of the working chamber or tanks with optimum adaptation to the items being cleaned. These are arranged vertically and are cylindrical. The flow-optimized design of the flood tanks prevents deposits from forming and contributes to improved media flow. This results in extended bath life and thus cost and resource savings as well as higher productivity.

**Effective media treatment reduces operating costs**

Suspended and light materials, such as oil or casting dust, are reliably removed from the cleaning baths by effective gravity separators. The separate media circuits of the flood tanks are each equipped with full-flow filtration. Both bag and high-performance filter elements can be used in the flexibly designed filter housing without any modifications. When a filter change is required, this is indicated on the HMI, including operating instructions, and can therefore be carried out without any problems. For continuous treatment of the rinsing baths, a newly designed Aquaclean system can also be integrated, whose waste heat is used to completely heat the cleaning medium in flood tank one. Overall, the media treatment of the new EcoCvario is designed for long circulation of the baths, which significantly reduces energy, water, and chemical consumption and lowers operating costs.

**Simple, safe operation and state-of-the-art communication technology**

The user-friendly HMI ensures intuitive and safe control through a guided dialogue between the system operator and the control panel. At the same time, it simplifies the definition of up to 50 part-specific cleaning, rinsing, and drying programs, each with up to 30 process steps. The ability to set the parameters for each program sequence of the cleaning processes individually allows for extremely precise adaptation of the cleaning to the parts.

IO-Link is used in the EcoCvario for safe process control and quick and easy maintenance. This is a future-oriented, standardized communication technology that connects intelligent sensors and actuators to a higher-level automation system. This results in various advantages, such as higher data availability and accuracy, improved productivity, simplified and faster maintenance, and fault diagnosis.

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Image captions

Photo: Ecoclean\_EcoCvario\_front



The highly flexible EcoCvario was developed for aqueous precision cleaning. The new system enables the integration of different cleaning and drying technologies that can be configured to suit specific applications and customer requirements.

Foto: Ecoclean\_EcoCvario\_innen



The design and equipment of the EcoCvario, with vertically arranged, flow-optimized flood tanks and specially welded media-carrying lines, are designed to meet high cleanliness requirements.

Image source: Ecoclean GmbH

*The SBS Ecoclean Group develops, produces, and markets forward-looking machinery, systems and services for industrial parts cleaning and surface processing, as well as customized automation solutions. Another area of activity is the development and series production of efficient alkaline electrolysis systems for the decentralized production of green hydrogen. Innovation is driven by the two competence centers in Germany, which support the global Group companies with technical expertise, research, and pioneering developments. The world's leading parts cleaning solutions help companies around the globe in a wide range of industries, such as mechanical engineering, the semiconductor supply industry, precision optics, medical technology, the automotive industry, and its suppliers, microtechnology and precision engineering, aerospace, cutting tools, and fasteners, to produce efficiently and sustainably at high quality levels. Ecoclean's success is based on innovation, cutting-edge technology, sustainability, being close to our customers, diversity, and respect. The Group of companies unites the Ecoclean, UCM and Mhitraa brands. It has twelve locations in Germany and eight other countries worldwide and employs a workforce of around 900.*

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