

MULTI-USER CLEANING SYSTEMS



INDUSTRIAL CLEANING TECHNOLOGY

FOOD INDUSTRY



Industrial cleaning plays a central role in the food industry, as it is crucial for the safety and quality of the products manufactured. To ensure high hygiene standards, production equipment such as machines, conveyor belts and tanks must be cleaned regularly and thoroughly.

Surfaces in production areas are also subject to strict cleaning protocols to prevent any form of contamination. These measures are essential to avoid cross-contamination, which can be caused by bacteria, allergens or other harmful substances.

A clean production environment is also crucial to comply with food industry regulations and guidelines that are designed to protect the health of consumers. Furthermore, consistent cleaning helps to prevent production losses and expensive downtime by ensuring equipment functionality and avoiding product recalls due to contamination.

PAINT AND VARNISH INDUSTRY



In the paint and varnish industry, industrial cleaning is crucial to ensure product quality and maintain production efficiency. Production equipment such as mixing containers, filling machines and tanks must be regularly cleaned to remove paint and varnish residue that could affect the consistency and properties of new batches. Such contamination could cause product defects and expensive recalls, damaging the brand image.

In addition, thorough cleaning is necessary to minimise safety risks from flammable residues and to comply with environmental regulations.

Cost savings are ensured by the use of automated cleaning systems, regular maintenance and well-trained personnel. This increases efficiency and reduces downtime. Industrial cleaning in the paint and varnish industry is the refore essential to guarantee high-quality products while controlling operating costs.

PHARMACEUTICAL INDUSTRY



Industrial cleaning is critical in the pharmaceutical industry, as it directly affects the safety and efficacy of medications. Production equipment, clean rooms and transport containers must be regularly and thoroughly cleaned to prevent any form of contamination that could jeopardise the quality of the drugs.

Cleaning is necessary to avoid cross-contamination between different batches of medication and to comply with strict legal requirements.

Insufficient cleaning can not only affect the effectiveness of medications, but also lead to significant legal and financial consequences, including expensive recalls. Cost savings can be achieved by using automated cleaning systems that increase production efficiency and extend the service life of equipment. Industrial cleaning is therefore an indispensable part of the manufacturing process, ensuring the effectiveness and safety of pharmaceutical products.

CONSTRUCTION INDUSTRY



In the construction industry, industrial cleaning, especially the cleaning of truck tanks, is of central importance to ensure the quality of the construction materials and safety on construction sites. Tanker trucks, which often transport a variety of construction materials or chemicals, must be regularly cleaned to avoid contaminating their new loads. Residues from previous shipments could otherwise reduce the quality of the materials or cause chemical reactions that endanger safety.

Keeping machinery and work areas clean is also essential to maintaining equipment functionality and extending its lifespan. A clean work environment also minimises the risk of accidents by preventing hazardous conditions such as slippery surfaces or blocked walkways. With well-organised cleaning schedules, downtime can be reduced, maintenance costs can be lowered and overall site productivity can be significantly increased.

LOW ENERGY CONSUMPTION

The **sera** multi-user cleaning system uses the latest technology and highly developed components to ensure maximum efficiency and performance. All system components are state of the art. These include, among others:

- **IE4 motors:** These highly efficient motors help to significantly reduce energy consumption and meet the highest efficiency standards. IE4 motors are known for their durability and low operating costs.
- **S7 control:** The system is equipped with a Siemens S7 control that enables precise and reliable control of the entire cleaning process. This advanced control ensures optimal adjustment and monitoring of the operating parameters, which leads to improved performance and efficiency of the system.

INDUSTRIAL CONTINUOUS OPERATION

CONTINUOUS OPERATION IS OUR STANDARD!

The **sera** multi-user cleaning system is characterised by its robust construction and high durability, making it an ideal solution for demanding cleaning tasks. The main features include:

- Stainless steel construction: The system is made of high-quality stainless steel, known for its corrosion resistance and robustness. The construction ensures that the system will withstand challenging operating conditions for a long time while maintaining its structural integrity.
- Long service life: Using lower pump speeds minimises wear on the pumps and other mechanical parts. This significantly extends the service life and reduces the need for frequent maintenance and replacement parts.

MAINTENANCE-FRIENDLY SYSTEM

The **sera** multi-user cleaning system offers numerous advantages in terms of ease of maintenance and operational efficiency. Key features include:

- **Easily accessible pumps:** The pumps in the system are designed to be easily accessible. This makes maintenance and repair work significantly easier and minimises downtime.
- Maintenance of the cleaning operation during inspection work: Thanks to the well-thought-out design of the system, the cleaning operation can continue even during inspection work. There is no need to interrupt operations, which is a great advantage, especially in continuous production processes.
- **Consistent duty cycles for all pumps in the system:** The system controller ensures that all pumps in the system are utilised evenly. This results in consistent duty cycles and prevents overuse of individual pumps. This reduces wear and tear and extends the service life of the pumps.





LOW WATER CONSUMPTION



The **sera** multi-user cleaning system is characterised by its efficiency and conservation of resources. It only draws the amount of water that is actually needed for the cleaning process. This means that no water is wasted, which is both ecologically and economically advantageous. In addition, the system works without a by-pass operation that conveys parts subject to wear. This considerably reduces wear on components and extends the service life of the system, which in turn lowers operating costs and increases reliability. **sera**'s innovative technology thus ensures a sustainable and economical cleaning solution that is tailored to actual needs.

SMART CONTROL

The **sera** multi-user cleaning system is equipped with a range of state-of-the-art technologies and features that ensure optimal performance and ease of use. Some of the outstanding features include:

- **High-quality PLC control:** The system is equipped with a high-performance programmable logic controller (PLC) that enables precise and reliable control of the entire cleaning process.
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- **Multiple programme selection:** The system offers a variety of cleaning programmes that can be selected as needed. This programme selection makes it possible to optimally adapt the cleaning process to the specific requirements of different applications, resulting in improved efficiency and cleaning performance.
- Automatic process monitoring: Automatic monitoring of the cleaning process ensures that all parameters are continuously controlled. In case of deviations from the setpoints, corrective measures are initiated immediately.

CERTIFICATION

The **sera** multi-user cleaning system can be supplied with relevant certifications and certificates that enable its use in specific environments and underpin its safety and quality standards:

- FDA certificate for elastomers: The elastomers used in the system can be provided with an FDA certificate. This means that the materials meet the strict requirements of the US Food and Drug Administration and are suitable for use in the food, beverage and pharmaceutical industries. This ensures that the materials used are safe and pose no risk to health.
- **ATEX certificate possible:** The system can optionally be provided with an ATEX certificate. This certificate confirms that the system is suitable for use in explosion-prone areas. It ensures that the system complies with the European directives for explosion protection and can be operated safely in environments where explosive atmospheres may occur.



sera MULTI-USER CLEANING SYSTEMS



With the new energy-efficient high-pressure systems for multi-user applications, **sera** is setting new standards in industrial cleaning technology. Developed to simultaneously control up to 24 consumers - from hand lances to tank wash heads - precisely and pressure-dependently, the complete system promises absolute efficiency in continuous operation. It ensures exact water delivery that adapts seamlessly to the requirements of the consumers. The set pressure always remains constant, while the flow rate is dynamically adapted to the number of active consumers by frequency converters.

sera's expertise in the field of pump, nozzle and control technology naturally also flows into every high-pressure system for multi-user applications - so that the perfect system can be designed and built for every customer application. The result is a significant reduction in water and energy consumption. In this way, **sera** also creates added value for people and the environment in the field of industrial high-pressure cleaning.

APPLICATIONS AND ADVANTAGES



APPLICATION EXAMPLES

- Surface cleaning (1)
- Internal tank cleaning (2)
- External tank cleaning (3)
- General external cleaning(4))

ADVANTAGES

- Determining the operating point at the customer's site
- Energy-efficient high-pressure system
- Multiple cleaning stations in a single appliance
- High productivity
- Time saving

PRODUCT DESCRIPTION



The complete system from **sera** is suitable for the continuous industrial use of several hand lances, tank wash heads or other consumers in the high-pressure range up to 250 bar.

In order to achieve the highest possible efficiency, **sera** offers these systems with a pressure-dependent demand control (1). This control enables the targeted delivery of the amount of water required by the consumer, whether by a single pump unit or by several pump units (2). The preset pressure always remains constant. Depending on how many consumers are in use, the flow rate is regulated upwards or downwards via the frequency converter (3). The use of this pressure-dependent demand control reduces both water and energy consumption.

Wear-promoting bypass operation is avoided and the service life of high-pressure pumps and control valves (4) is significantly increased.

If the pressure drops, e.g. due to wear of the nozzles on the tank wash head, the speed of the machine is automatically adjusted to compensate for nozzle wear for a certain period of time. **sera** uses energy-efficient IE4 motors **(5)** in these systems. The significantly lower energy and wear part consumption ensures rapid amortisation of the system.

TECHNICAL DATA

GENERAL SYSTEM DATA

max. System pressure	up to 250 bar
Runtime	Continuous operation
Control	Demand-led frequency inverter control
Water	Suitable for use with service water*
Temperature	Standard version suitable for water temperatures up to 60°C (higher temperatures on request)

CONSUMERS	
max. Consumers / Lances	24 Consumers / Lances (more consumers on request)
Flow rate per consumer	Standard flow rates approx. 10, 12, 15, 20 l/min per consumer (larger flow rates on request)

* Pre-filtration is necessary. This is available as an option.



OPERATING POINT DETERMINATION

Outdated high-pressure systems with bypass control are often used. This means that the high-pressure system produces the maximum amount of water required by all consumers. The water that is not used is pumped around the circuit via the bypass. This wastes energy unnecessarily and increases wear on the system dramatically.

For economical, resource-saving use of a high-pressure system for industrial cleaning, it is advisable to determine the exact operating point of the cleaning process.

sera technicians determine the operating point and establish which amount of water and which pressure are really necessary to dissolve dirt and deliver a satisfactory result. Determining the operating point is the basis on which every customised complete system is designed.

CONTINUOUS OPERATION IS OUR STANDARD

For industrial applications, it is often essential that cleaning systems run in continuous operation - this is the only way to clean machines, parts, tanks, trolleys, etc. as economically as necessary.

With **sera** high-pressure cleaning systems, continuous operation is possible thanks to the very conservative speed of the motors - with guaranteed very good cleaning results. They can run 24 hours a day without any problems.

Multi-user systems are also suitable for use with service water - this only requires pre-filtration, which sera offers as an option. By using filtered process water, the system can therefore operate very economically and thus protect the environment.

EFFICIENT SERVICE

From planning and commissioning of systems to a fast and uncomplicated worldwide device replacement service, **sera** offers support in all project phases.

In line with the company motto "We create added value for people and the environment", the **sera Group** always aims to create sustainable and reliable solutions for the customer and to achieve optimum production results. To ensure this, a high level of system availability with a minimum of system downtime is necessary. To this end, **sera** offers a wide range of services from technical support and spare parts service to repair service.



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