

DOSING TECHNOLOGY FOR MINERAL WATER AND NON-ALCOHOLIC BEVERAGE COMPANIES



INSPIRED. SOLUTIONS. FOR CUSTOMERS.



sera

A company of the future

sera is one of the world's leading companies in the field of dosing and compressor technology. For 80 years, the **sera Group** has been developing and producing application solutions that depend on the precise dosing, pumping and compression of liquids and gases.

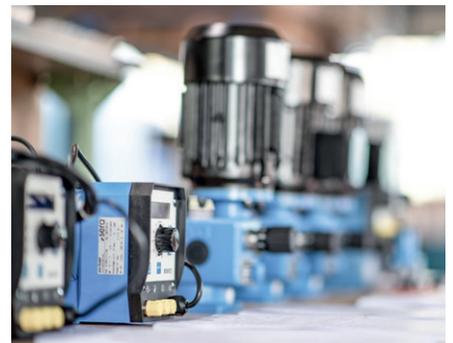
sera is an independent family-owned company headquartered in Immenhausen. In addition to subsidiaries in Great Britain, Austria, Switzerland, South Africa and Spain, **sera** also operates branches in Italy and the United Arab Emirates. More than 30 strong partners represent **sera** in over 80 countries, ensuring expert support, advice and services locally worldwide.

EXCELLENCE IN FLUID TECHNOLOGY

We create added value for people and the environment.

As an environmental technology company, **sera** offers a wide range of products that provide the right solutions for many of your applications worldwide. **sera** products are used wherever the precise dosing and pumping of chemicals and liquids is required, for example in water and waste water treatment and disinfection.

Customised solutions round off our portfolio. In addition, our customers worldwide benefit from our comprehensive services: from support in the planning and commissioning of systems, to the quick and easy replacement of devices worldwide, to the development of innovative technologies.



Comprehensive product portfolio

We create customised solutions for your application. Not only can you choose from a wide range of standard products and material designs, but you can also have customer-specific systems configured entirely according to your requirements.

The customer is our top priority

Assigned, expert contact persons throughout the entire offer, order and project realisation process ensure that you receive optimal customer care and advice. We respond flexibly to your needs and are quick and reliable in our processing and handling. From engineering to production and after-sales service, we offer you high-quality products and services.

Long-lasting products and high quality

For 80 years, the name **sera** has stood for exceptional quality and expertise. We develop dosing pumps and systems for extreme operating conditions and long runtimes. That is why the quality and reliability of our products are our top priority. Place your trust in the expertise and experience of our team.



THE RIGHT SOLUTIONS FOR YOUR PROCESSES

Our expertise for your success

Plants and systems for the production of food and beverages must be regularly cleaned and disinfected to avoid unwanted microbial growth, biofilms and unwanted product carry-over. Since the legally prescribed natural purity of mineral waters does not allow any preservative treatment processes for the product, very high hygiene standards must be adhered to when bottling these products. Suitable and effective cleaning and disinfection processes are the prerequisite for the necessary industrial hygiene and a high-quality and safe end product.

For decades, **sera** pumps and dosing systems have been an important and reliable part of CIP systems in mineral springs and non-alcoholic beverage production plants worldwide. In addition, **sera** dosing systems are used in the production plants of such companies. The precise and

reliable performance ensures consistent product quality.

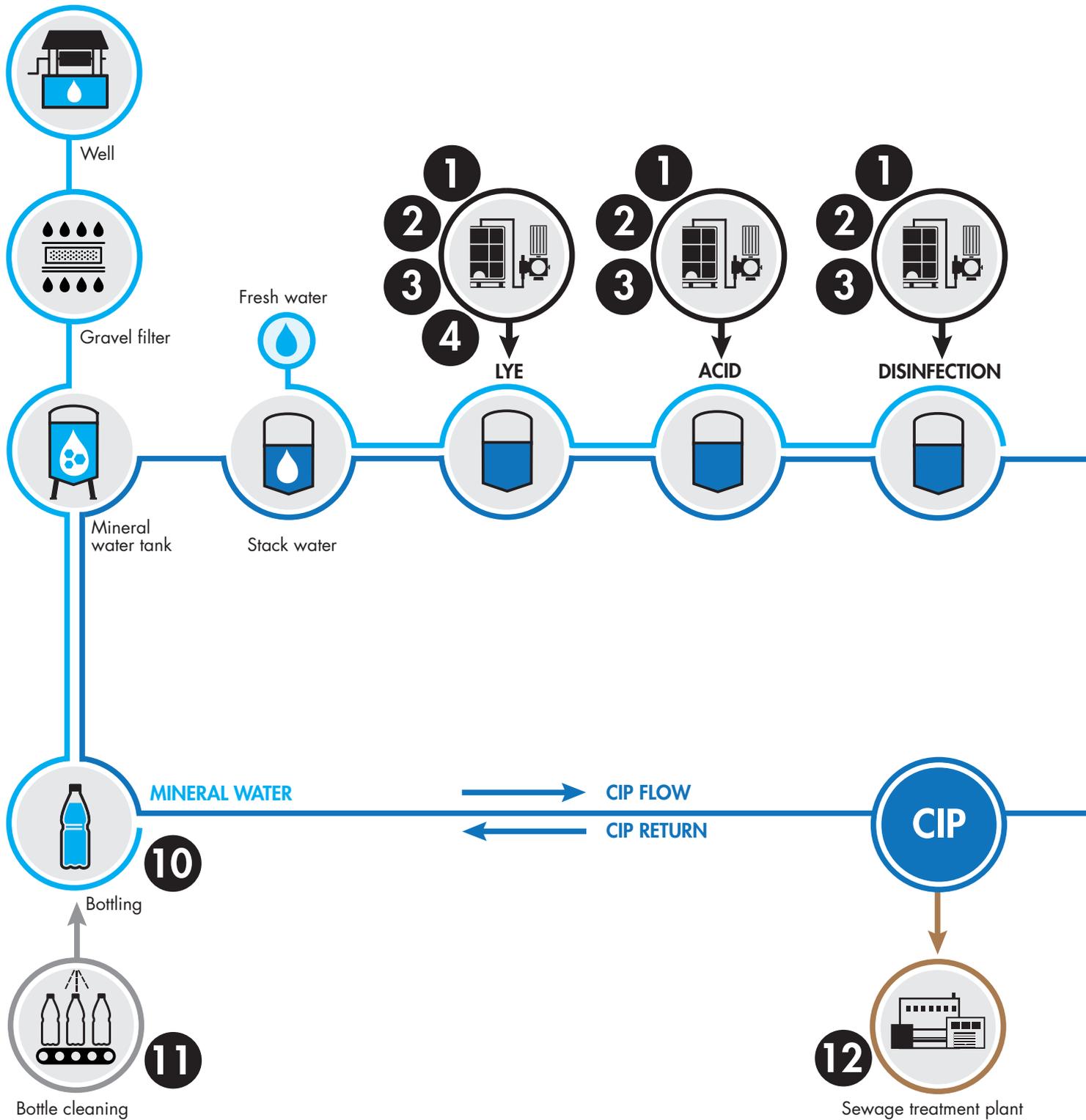
The comprehensive **sera** product range includes dosing and transfer pumps, standardised dosing systems and units, as well as customer-specific system and plant solutions developed for the following applications:

- Cleaning and disinfection of tanks, pipework and systems (CIP)
- Dosing of raw materials, additives and juices
- Regeneration of drinking water treatment systems
- Treatment of process water
- Dosing of conveyor belt lubricants
- Dosing of cleaning agents for bottle cleaning
- Treatment of boiler feed water
- Waste water treatment

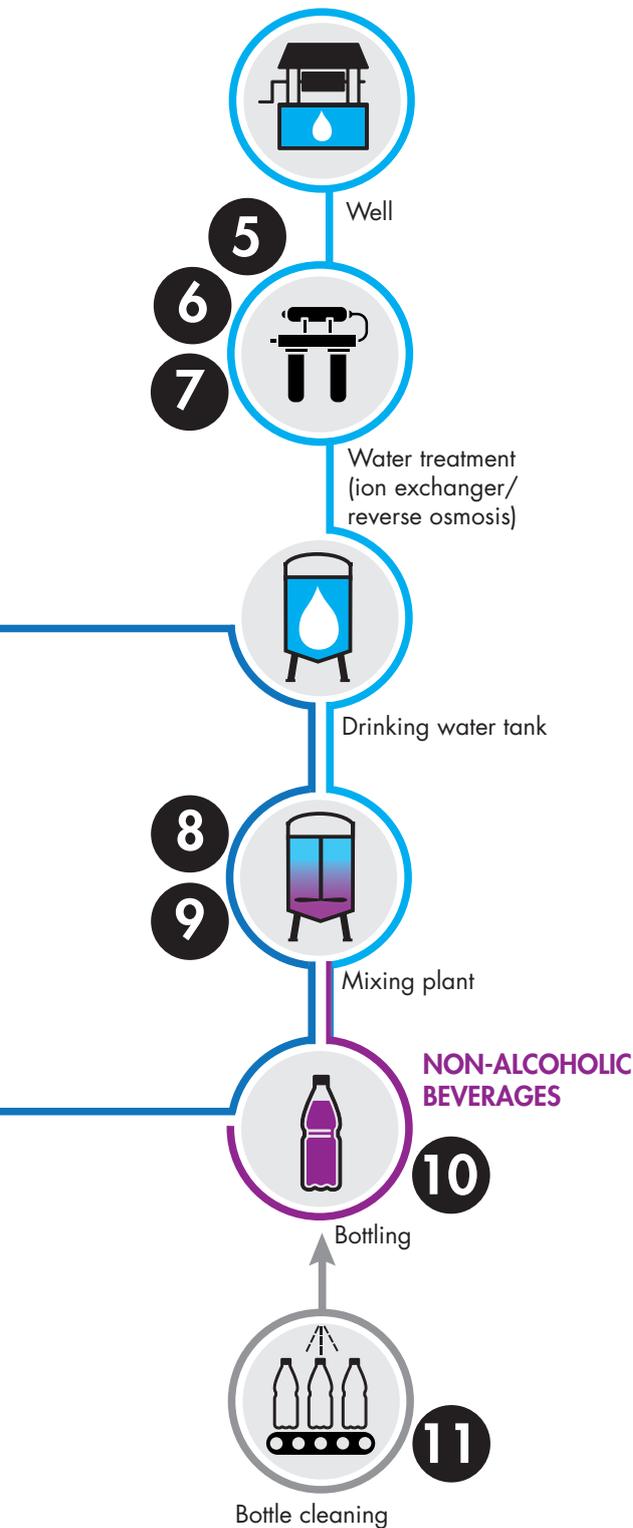


sera supports mineral water and non-alcoholic beverage companies with industry-specific, coordinated solutions that take into account economic and ecological aspects. The highest priority is given to safe production and cleaning processes that meet the highest hygiene standards, which are a basic requirement for the production of high-quality beverages.

PRODUCTION OF MINERAL WATER AND NON-ALCOHOLIC BEVERAGES



THE RIGHT SOLUTION FOR EVERY PROCESS STEP



We offer a comprehensive range of products to ensure the optimum solution for each process step. The following examples of solutions from our comprehensive range are based on a typical process flow for the production of mineral water and non-alcoholic beverages:

- 1 DOSING OF CHEMICALS AND ADDITIVES FOR CLEANING AND DISINFECTION
- 2 IBC EMPTYING
- 3 WITHDRAWAL OF CHEMICALS FROM STORAGE TANKS
- 4 PREPARATION OF CAUSTIC SODA FROM SOLIDS
- 5 DOSING OF CHEMICALS FOR REGENERATION
- 6 DOSING OF ANTISCALANT
- 7 DOSAGE OF CHEMICALS FOR PH ADJUSTMENT
- 8 DOSING OF RAW MATERIALS AND ADDITIVES
- 9 DOSING OF CONCENTRATES CONTAINING SOLIDS
- 10 DOSING OF BELT LUBRICANTS
- 11 DOSING OF CLEANING AGENTS
- 12 WASTE WATER TREATMENT

1

Precise and reliable dosing of alkalis, acids and disinfectants is essential for numerous ancillary processes in the beverage industry. The standardised CVD dosing systems impress with their versatility, short delivery times and unrivalled price/performance ratio. CVD (Compact Vertical Dosing) represents the largest modular system for dosing applications. **sera** is the only manufacturer to offer the appropriate drive technology in a configurable system for every application.

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DOSING OF CHEMICALS AND ADDITIVES



AREAS OF APPLICATION

- Dosing of cleaning agents and disinfectants in the CIP process
- Dosing of chemicals for cleaning bottles
- Dosing tasks in the field of waste water treatment



PUMP FEATURES

- Modular design allows for a wide range of variants
- Controllable pumps on request with Profibus / Profinet
- Stepper motor pumps for precise and low-pulsation dosing



SETUP

The fully modular design makes it possible to adapt the system's functions to individual dosing requirements using standardised components, as if from a construction kit. The CVDs are suitable for use with IBCs, drums, small containers and storage tanks. Matching suction lances and connections complete the portfolio:

- Compact design, modular system
- Space-saving wall mounting
- High operational and process reliability
- Options with one pump (CVD1), two pumps (CVD2) or as a compact solution CVD1s
- Suction and pressure-side connection available



2

In the beverage industry, continuous removal of chemicals is very important – as is the efficiency of the process. **sera's** IBC emptying station fulfils both requirements.

IBC EMPTYING



AREAS OF APPLICATION

Precise dispensing of chemicals such as caustic soda or disinfectants from IBCs.



FEATURES

- Simple structure consisting of a storage area and a storage tank
- Inclined storage area ensures complete emptying of the IBC
- When the IBC is completely empty, a defined residual volume remains in the storage tank
- IBCs can be replaced without interrupting the process
- Monitoring with level indicator and two float switches
- Improvement in occupational safety



SETUP

The IBC emptying station enables a continuous supply of chemicals in production processes. It consists of an inclined storage area for the IBC container, a receiving vessel and a collection tray. The liquid flows by gravity from the IBC into the receiving vessel, leaving a defined residual volume – this means that the IBC can be replaced without interrupting the process. The dosing station is placed directly on the collection tray. An additional drip tray is therefore not necessary.

3

In the beverage industry, chemicals are usually stored in storage tanks in a centralised manner in concentrate rooms. **sera** dosing systems not only ensure that the chemicals are removed safely and without problems, but also that they are dosed precisely over long pipe routes.



REMOVAL OF CHEMICALS FROM STORAGE TANKS



AREAS OF APPLICATION

Extraction of acids, lyes and disinfectants in large-scale food and beverage production plants.



FEATURES

- Siphon on the tank
- Suction aid
- Pulsation damper
- Flow meter



SETUP

Due to the design of the containers in the collecting tray, the product is only removed from the storage tanks, which are up to five metres high, from above. Therefore, a lifting device is always installed on the tanks at the highest point. In addition, the **sera** dosing systems are equipped with a suction aid. These devices enable trouble-free operation. **sera** offers the option of manufacturing storage tanks with a volume of up to 10 m³ in-house. This means that individual requirements can be flexibly implemented and high quality standards guaranteed.



4

When caustic soda is prepared from solids, an exothermic reaction occurs with temperatures of up to 95°C. The **sera** caustic soda preparation station is designed so that the user can easily add the caustic soda flakes to the process from a safe distance.

PREPARATION OF CAUSTIC SODA FROM SOLIDS



AREAS OF APPLICATION

Preparation of caustic soda from pellets and flakes.

Caustic soda is essential for thorough cleaning in the beverage industry and thus a prerequisite for safe, high-quality products.



FEATURES

- Media-contacting parts made of stainless steel
- Bag emptying with screw conveyor approx. 1,000 kg/h
- Filling level display with shut-off
- Electric agitator
- Temperature display
- Overflow with siphon
- Manual water addition

- Contact protection (all-round pipes)
- Bag emptying separate from hot area
- Version available for Big Bag feeding
- Improvement in occupational safety
- NaOH solutions from 20 to 50% possible



SETUP

The stainless steel container is filled with solids by a screw conveyor. The solids are fed into a conveyor hopper by the operator. The distance to the hot container ensures the operator's safety.

ACCESSORIES

- Suction device
- Transfer station
- Storage tank



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Precise and reliable dosing of lyes, acids and disinfectants is essential for numerous secondary processes in the beverage industry. **sera**'s customer-specific dosing systems are tailor-made solutions which are precisely adapted to the requirements of the respective processes. **sera** is the only manufacturer to offer the appropriate drive technology for every application in a configurable system.

DOSING OF CHEMICALS AND ADDITIVES



AREAS OF APPLICATION

- Dosing of cleaning agents and disinfectants in the CIP process
- Dosing of chemicals for bottle cleaning
- Dosing tasks in the field of waste water treatment



PUMP FEATURES

- Modular design allows for a wide range of variants
- Controllable pumps on request with Profibus / Profinet



SETUP

The fully modular design of our dosing systems makes it easy to customise them to individual dosing requirements.

- Compact and space-saving design
- Type and size of pump as required
- Pipework in PVC, PP, PVDF, stainless steel
- Assembly panel with drip tray and drain
- Wall mounting – optionally with floor stand
- Leak detector with building inspectorate approval



8

In the beverage industry, a hygienic dosing pump ensures precise and safe dosing of raw materials and additives. It is made of food-safe materials, is easy to clean and prevents contamination. The pump meets strict hygiene standards and contributes to the quality and safety of the end product.

DOSING OF FOOD ADDITIVES



AREAS OF APPLICATION

- Dosing of raw materials and additives



FEATURES

- CIP-cleanable pump body
- Food compliant according to EC 1935/2004 and FDA
- SIP capability
- Dead space optimised design of pump body- and valves



SETUP

- All parts that come into contact with the media are made of stainless steel or other food-grade materials.
- Smooth, electropolished surfaces and a special design allow for thorough cleaning and prevent contamination.

9

The **sera** peristaltic pump is used in the mixing system of the beverage industry to precisely dose concentrates containing solids into water, thus creating the basis for non-alcoholic beverages. Thanks to its design, it can also gently pump viscous and particle-laden liquids without clogging. The pump is food-safe and fulfils the requirements of the FDA and Regulation EC 1935/2004, which guarantees product safety.



DOSING OF SOLIDS



AREAS OF APPLICATION

Dosing of concentrates containing solids

MEDIA

- Abrasive media
- Corrosive media
- Viscous media
- Shear-sensitive media



SETUP

- Maximum resistance to abrasion
- Unparalleled suction ability
- Unlimited dry running
- No valves or mechanical seals
- Gentle pumping
- Dosing possible in both directions
- Full dosing control
- Industrial, chemical-resistant and food-grade-versions
- Dosing accuracy of $\pm 1\%$



10

In the beverage industry, the dosing of conveyor lubricant ensures that the bottling plants run smoothly. The lubricant is applied to the conveyor belts in precise quantities to maintain their lubricity and minimise wear and failures. Especially in the beverage industry, exact dosing is crucial, as hygiene and operational reliability have the highest priority.

DOSING OF CONVEYOR BELT LUBRICANTS



EINSATZBEREICHE

- Dosing of conveyor belt lubricants



SETUP

- High-quality dosing pumps
- Suction lances for various container sizes
- Control units for quantity-proportional dosing
- Collecting tray if required
- Choice of materials according to the media used



ADVANTAGES

- Efficient lubrication: precise quantities reduce lubricant costs.
- Hygiene requirements: metering reduces residues and germ formation.
- Extended service life: gentle metering minimises material wear and maintenance costs.
- Environmentally friendly: less lubricant means lower water consumption and less environmental pollution.



12 WASTE WATER TREATMENT

sera offers proven solutions for waste water treatment in breweries

In the beverage industry, the treatment of wastewater is a central component of responsible and legally compliant operation. The wastewater is often contaminated with organic substances such as fruit residues, sugar, acids and cleaning agent residues, which must be removed before it is discharged into the public sewer system or into natural waters in order to protect the environment and resources. Careful treatment ensures that legal requirements for water quality are met while also reducing operating costs through the possible reuse of water. Professional wastewater management not only emphasises the company's environmental responsibility, but also strengthens its image as a sustainable company that relies on the careful use of resources and efficient processes.

The **sera** delivery programme for waste water treatment includes:

- Complete metering systems and metering systems
- Preparation and metering systems for polymer solutions
- System accessories
- Metering pumps



CLASSIC APPLICATIONS

- Carbon sources for a balanced nutrient ratio
- Phosphate precipitation
- Flocculation filtration
- Sewage sludge thickening
- Sludge dewatering
- Sludge conditioning
- pH adjustment
- Defoaming
- Desulphurisation of sewage gas
- H₂S elimination



SERVICE FROM THE MANUFACTURER – FOR PERMANENTLY AVAILABLE SYSTEMS

Maintenance, testing and further development for safe, predictable operation

The **sera** service ensures that your systems are operated reliably, safely, and economically in the long term. Structured maintenance, standard-compliant tests, and targeted analyses help to avoid unplanned downtime, make costs predictable, and prevent efficiency losses at an early stage.

Maintenance and testing – compliant with standards, plannable, manufacturer-approved

Our maintenance and testing services include:

- Maintenance of sera systems, pumps, and valves
- Maintenance of third-party units and fittings
- One-time maintenance or structured maintenance contracts including price advantages on replacement and wear parts

- Option for extended warranty upon commissioning by **sera**
- Inspection of tanks and piping systems for wear and static service life
- Annual, legally required inspections in accordance with WHG and AwSV by a specialist company
- System check in accordance with DGUV V3
- Risk assessment
- Inspections for early detection of wear
- Free on-site appointment for technical inventory
- Free quotation based on this

Technical development for changed processes

When processes change or systems need to be modernized, **sera** provides support with technically flawless,



reliable adjustments tailored to existing systems and future requirements:

- Conversion and expansion of existing dosing systems
- Adjustment of pipelines, e.g., after pump replacement
- Elimination of leaks in pipelines
- Retrofitting of valves and flush connections (clean & safety)
- Modernization of older systems to increase operational safety

Repairs with analysis of causes

- In-house repair of pumps and valves
- On-site repairs by experienced service technicians
- Fault and process analyses in the event of malfunctions
- Use of original parts for long-term operational reliability

Support and training – so that expertise remains within the company

- Competent analysis of your plant technology
- Spare parts service with fast response times
- Technical telephone support
- User training for safe and efficient plant operation
- Customer training for the safe selection of the right technical solution for each process step

The result: reliable technology, predictable costs, and a partner who looks after your plants at every stage – so that your operations run safely, efficiently, and without disruption.



SETUP AND COMMISSIONING – COMPLETELY FROM A SINGLE SOURCE

From installation to safe operation

Technical systems can only deliver long-term performance if installation, piping, and commissioning are precisely coordinated. The **sera** service team takes care of every step—clearly coordinated, professionally executed, and consistently tailored to your processes.

Installation and tank integration designed as a complete system

- Installation of plants and systems
- Positioning of storage tanks
- Professional connection of the tanks to the plant technology
- Ensuring that the entire structure is ready for operation

Commissioning that anchors knowledge in the company

- Functional testing of all components
- Parameterization and fine-tuning of the plant
- Practical training of operating personnel
- Imparting knowledge for safe operation and fault detection

The goal is not only to start up the plant, but also to permanently anchor the necessary process understanding in the company.



Pipe installation as an integral part of the system

sera implements all piping variants:

- Plastic pipes: single-walled, double-walled, or with inliner
- Piping with trace heating
- Stainless steel pipes with clamp ring fittings
- Media-compatible design from the plant to the dosing point
- Hosing for flexible requirements

In doing so, **sera** not only takes current operating conditions into account, but also maintenance accessibility, expandability, and long-term operational safety. Each piping system is planned and implemented as an integral part of the overall system.

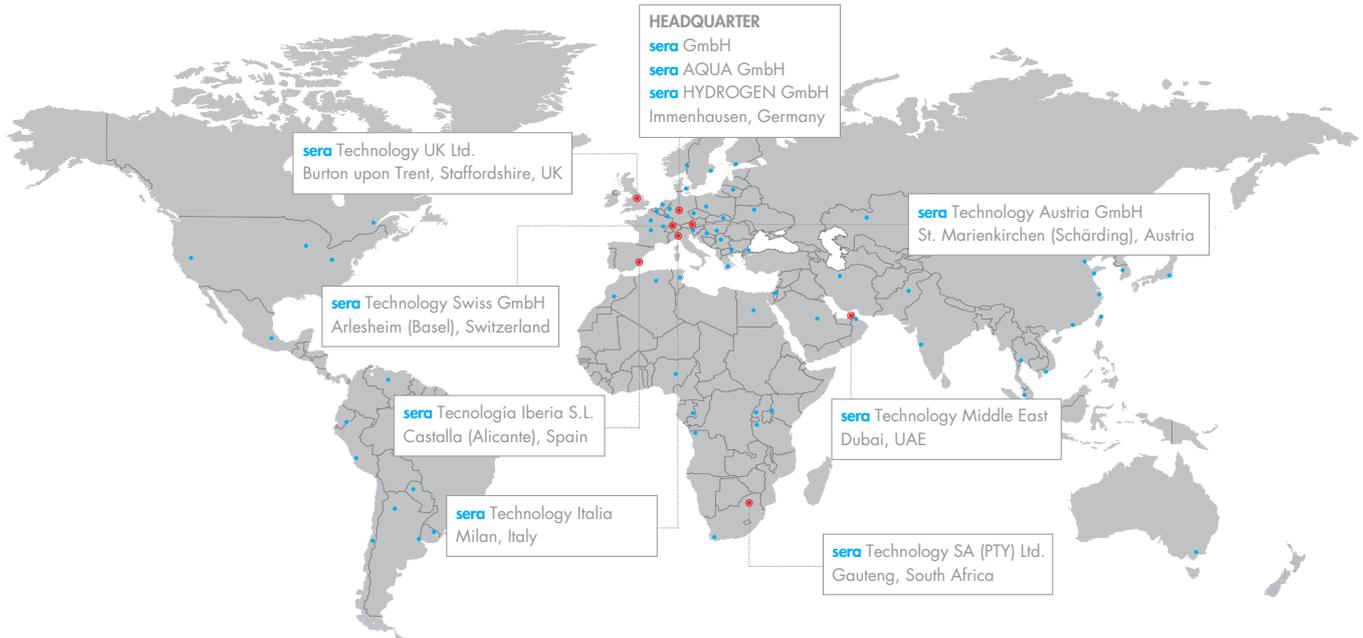
The result: stable, safe, and efficient dosing processes – from day one.

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FOR CUSTOMERS.**





FOLLOW US



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