

AUTOCLAVES / STEAM STERILIZERS FOR LABORATORY



Benefit from our experience in manufacturing, consulting, sales, project planning, service and state-of-the-art equipment technology so that you can concentrate on your core tasks

SION IN HEALTA

GERMAN ENGINE



WELCOME

With more than 45 years of experience in the field of medical and laboratory technology, the second generation of SCHLUMBOHM Medizin-Labor-Technologie-Hamburg GmbH is already successfully meeting the demanding requirements of the market. As early as 2014, company founder Hans-Joachim Schlumbohm retired from day-to-day operations and handed over the management to his son Tobias Schlumbohm. Schlumbohm Senior continues to be responsible for research and development in the company.

As a manufacturer of steam sterilizers, washer disinfectors, care combinations, stainless steel furniture, and systems for the treatment of medical waste, we supply hospitals and laboratories worldwide with our medical and laboratory technology. We have over 120 highly qualified employees working at our production sites in Germany and Italy.

The correct determination of requirements and the preparation of planning proposals are an absolute must. Professional project support, right up to installation and commissioning, is just as important as seamless customer service. With our solutions, you not only receive technically mature systems but also the assurance that you have a professional partner taking care of your functional processes.

An important key to our long-term success and market acceptance is ensuring quality, operational reliability, and functionality in day-to-day operations while harmonizing these features with economic aspects.

In this context, we have a team of over 20 service technicians available to you 365 days a year, 24 hours a day, providing immediate service throughout Europe. The mangement in Hamburg handels accepting orders and the scheduling of all field employees

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Hans-Joachim Schlumbohm
Shareholder

Tobias Schlumbohm CEO

SLS PRODUCT INFORMATION

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INNOVATIVE NEW PRODUCTS PRESENTED IN BRIEF
THE NEW GENERATION OF OUR FULLY AUTOMATIC
AUTOCLAVES / STEAM STERILIZERS FOR LABORATORY

Technical specifications

The SLS line of saturated steam sterilizers for laboratory use has been designed with the aim of guaranteeing the quality of the final result, obtaining the repeatability of the sterilization processes, protection for operators and the environment and protection in conditions maximum guarantee of safety.

These equipment, designed for use in research laboratories, through integrated safety devices and components, apply the concept of redundancy. The entire product line is CE marked.

Based on the intended use, the needs of the laboratory, the operation of the employees and the classification of the risk level up to SAL4, the equipment can be configured with multiple technical solutions that can be adopted.



Sterilization chamber

The sterilization chamber, the interspace and the doors are made entirely of AISI 316 TI or AISI 316L quality stainless steel.

The quality of the materials and the thicknesses have been defined to ensure a long life of the devices.

Total coverage of the chamber from the cavity (100%).

The "mirror" electrolytic polishing (roughness of less than 5 microns) of the inside of the chamber guarantees hygiene and high resistance to corrosion.

Dynamic sealing device between chamber and doors with "o-ring" silicone gasket operated with steam or with sterile filtered compressed air.

Hydraulic plant

The hydraulic plant consists of rigid pipes and components made of AISI316 stainless steel.

Great care is taken in the design of the fluid dynamics of the systems to ensure the perfect passage of fluids and avoid areas of retention and stagnation.

All connections are made using "tri clamp" technology and TIG orbital welding. The pneumatic elements installed on the systems are made of AISI 316L stainless steel and pneumatically controlled. This choice guarantees lasting efficiency in opening and closing operations.

For high biological risk applications (BSL3 and BSL4) or where required, all analogue and digital components and / or sensors in direct contact with the chamber will be of the hermetic type and the signal will be transmitted indirectly so that a hermetic barrier is obtained. kept safe.

All maintenance phases must observe specific safety protocols.



Configurable vacuum device

The configurable vacuum device on the sterilizers can be of the type with a liquid ring type vacuum pump or with a "dry" mechanical type vacuum pump compatible with steam (Busch Technologies). The performances are in compliance with the UNI EN 285 standard.



With the liquid ring pump, an inlet heat exchanger is provided for cooling the steam and the use of softened water is recommended to reduce maintenance.



With a dry mechanical pump (Busch Technologies) there is no water consumption to generate the vacuum and maintenance is reduced and one is not affected by external factors such as water temperature.

Water recirculation and recovery device

Water recirculation and recovery device for equipment that uses a liquid ring vacuum pump to generate the vacuum; this technology saves over 40% of the water required for the correct operation of the vacuum pump.

By using a chiller fed with frozen water to reduce and keep the pump water cold, we can achieve savings of over 70%.

The pneumatic elements installed on the systems are made of AISI 316L stainless steel and pneumatically controlled.

This choice guarantees lasting efficiency in opening and closing operations.





BIOSEAL

Airtight separation barrier named «BIOSEAL», which perfectly isolates the rooms from each other.

The Bioseal is made of AISI 304 stainless steel and tightly welded on the frame structure and on the chamber.

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Steam generator water disconnection device

This technology prevents any possible return of polluting water into the distribution network and can be completed by:

- a. preheating and energy recovery device
- b. degassing device
- c. antibacterial device
- a. The preheating and energy recovery device through bypass and heat exchanger made of stainless steel converts the thermal energy of the condensate in the cavity to preheat the water used by the steam generator with significant energy savings. (optional)
- b. The degassing device allows the elimination of non-condensable gases from the water of the generator while maintaining the regulated and constant temperature over time. (optional)
- c. The antibacterial device prevents microbiological growth by maintaining a constant temperature at 80 ° C. (optional)





Cooling device

Cooling device of the drains with temperature control to be able to drain the fluids in compliance with the legislation in force in the different countries.

Flectronic B&D test

Electronic B&D test performed through integrated device for:

Integrated and managed device of the sterilizer management system

Do not take risks deriving from personal evaluation

Automatic result evaluation by the tool

Availability of sterilizers for immediate use in the morning

Automatic data logging and storage from the sterilizer

No consumable costs

No logging and manual archiving

Control of residual air in the sterilization phase of each cycle

Automatic data logging

Print the cycle

Automation of the start of the free B&D cycle without constraints

Bowie & Dick as required by EN 285 for the steam penetration test and tested in accordance with ISO 11140-4: 20017 (Sterilization of health care product).



Filtration device

Device for the treatment of pathogenic chamber effluents by recirculating non-vaporized condensates by filtration.

Burner device

Burner device with high temperature AISI 316L stainless steel incinerator certified with guarantee of the level of sterility of the air extracted from the vacuum device into the chamber.

An alternative or complementary technology to the filtration device.



Single of the

Bacteriological filtration

Single or double bacteriological filtration device installed at the chamber outlet and upstream of the vacuum device for the sterilization cycles of pathogens.

The absolute filters are mounted in AISI 316L stainless steel "ousings" cases, with in-line self-sterilization.

The "ousings" enclosures can be equipped with an integrity test device to manually check the condition of the filter cartridge or automatically by automating the steps and applying the integrity test tool.

The "pneumatic piston" pump

The "pneumatic piston" pump picks up the condensates and injects them into a plate exchanger to be evaporated again and reintroduced into the chamber by the steam circuit.

The treatment cycle with sterilization of the tributaries in the chamber ends only when their sterility is reached.









Execution with modular systems

The vacuum device and the steam generator can be made in separate autonomous modules to be installed in the technical rooms and leave the equipment in the laboratories

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Cooling

Different forms of cooling of the sterilized product present in the chamber according to the following methods:

Natural: with gradual temperature reduction over time.

The natural cooling device provides for the temperature control of the product which naturally cools down to the set value that authorizes the opening of the doors.



Indirect: with forced reduction of the temperature by cooling the jacket. The forced cooling device of the indirect product provides for the introduction and circulation of cold water in the cavity with the addition of sterile filtered air in the chamber to compensate for the pressure in the product.



Direct: with forced reduction of the temperature through the cooling of the jacket and injection of water spray directly on the product.

The forced cooling device of the direct product provides for the introduction and circulation of cold water in the cavity and injection of nebulized water directly on the product with the addition of sterile filtered air in the chamber to compensate for the pressure in the product.



Forced: temperature reduction via a magnetic drive fan that ensures constant turbulence in the chamber.

Forced cooling device of the product to be sterilized by operating a magnetic drive fan mounted on the upper wall of the chamber which ensures a constant flow and rapid evaporation of the condensate and for cycles with sensitive products a perfect air-steam homogenization.



Combinations between the different cooling modes are possible.

Disinfection cycle with hydrogen peroxide

Hydrogen peroxide vapor generator integrated or external to the sterilizer.

Starting from a stabilized liquid solution, the hydrogen peroxide particles are introduced into the sterilization chamber using a forced ventilation system until full filling.

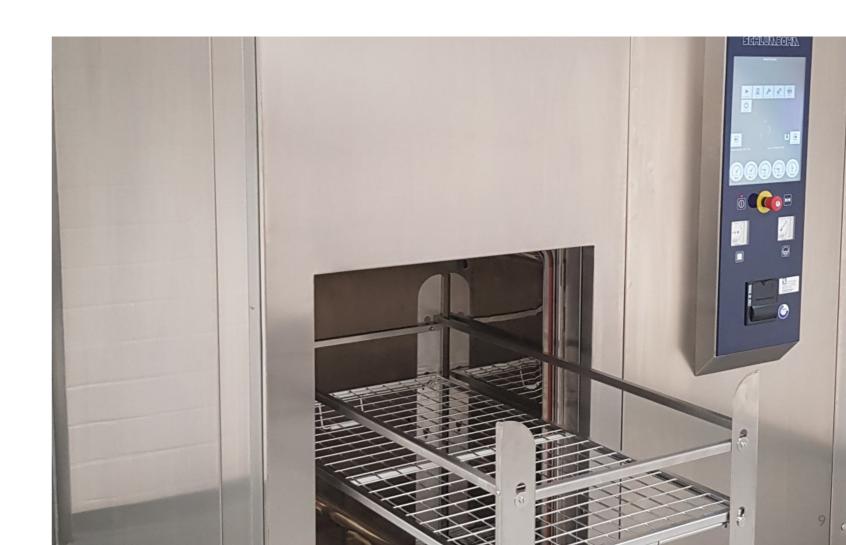
Maintaining the conditions to ensure the reduction of the microbial load.

Removal of residues from the treated surfaces by activating the vacuum device. Concentration control, both when introducing hydrogen peroxide into the chamber, and when removing residues from the treated surfaces.

Non-condensable gas test

Non-condensable gas test in compliance with EN 285 standard performed Built-in electronic Air Detector for:
Control of non-condensable gases in the sterilization phase of each cycle Market trend to have fully automated sterilizers
Automatic data logging and storage
No consumable costs
No logging and manual archiving

Steam quality control ensures that the sterilization cycle is performed only with saturated steam according to formula F (0) and reference standards.



Management system

The management system is composed of an industrial-type Siemens programmable electronic controller with a hardware configuration of the microprocessor complete with CPU, analog cards, signal input cards, signal output cards and serial cards and a 17-inch touch screen monitor and CPU with the windows operating system as an operator interface.

The system allows the management of sterilization cycles, parameter control, process safety, scheduled maintenance, sensor calibration, and recording through separate hardware and software.

The system, consisting of an industrial PC + Siemens microprocessor programmable controller, complies with CFR-21 Part 11.

Due to the particular H / W configuration and the modularity of the S / W, it allows you to store, without any numerical limit, all the cycles of interest to the Customer, within the framework of the programs provided and installed. It is therefore possible to create a customized library of cycles, stored with identification file names, with different parameters that can be selected by the Operator based on the type of load to be treated.

The Ethernet interface, which the system is equipped with in standard configuration, uses the DHCP protocol which allows connection to existing remote PCs (or servers).

No additional SW is required as the process controller uses the Windows® operating system.

The network configuration must be carried out by the Customer on his remote PC (or server).



You want to know more about this product?

... please contact our sales department.
We are looking forward to your inquiry.
Your SCHLUMBOHM Team

vertrieb@schlumbohm-medlab.com

Sterilization cycles

134 ° C sterilization cycle for machine parts, filters and membranes, empty glassware, etc.

134 ° C sterilization cycle C for textiles and drapes in general

134 ° C sterilization cycleC for all potentially infected items coming from inside the laboratory *

134 ° C sterilization cycleC for potentially infected solid material coming from inside the laboratory condensation included *

134 ° C sterilization cycle for empty cages or empty bottles *

134 °C sterilization cycleC for cages with litter *

134 ° C sterilization cycleC for litter *

121 °C sterilization cycle for food *

121 ° C sterilization cycle for Gel*

Door opening disinfection cycle *

121 ° C sterilization cycle for potentially infected liquid products coming from inside the laboratory condensation included *

121 °C sterilization cycle for rubber or derived materials.

121 °C sterilization cycle for liquids in non-hermetically sealed containers and natural cooling.

121 °C sterilization cycle for liquids in non-hermetically sealed containers and indirect forced cooling.

121 ° C sterilization cycle for liquids in non-hermetically sealed containers and direct forced cooling. * Crash test cycle for vials, ampoules, etc. hermetically sealed *

121 ° C sterilization cycle with air-steam mixture for sensitive products and delicate packaging. * Disinfection cycle with hydrogen peroxide. *

Automatic filter integrity test. *

Manual filter integrity test. *

Condensable gas control test. *

Traditional steam penetration test cycle (Bowie & Dick).

Automatic electronic steam penetration test cycle integrated into the machine compliant with EN 285. *

Vacuum leak test cycle 13 mbar in 10 minutes (1.3 mbar / min)

User cycle to program 100 new cycles

(* Optional)

The cycles of fractional vacuum sterilization and condensation treatment for potentially infected material (solid or liquid)

This system have been tested and recognized by the Robert Koch Institut (RKI - German Institute of Public Health).

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Different operating modes

Electric (E)

By means of a steam generator incorporated in the device that produces clean steam thanks to the electric resistances to be used and stored for sterilization cycles.



Direct steam (S)

By means of a direct connection to the external steam line, the same is taken to be used for the sterilization cycles once filtered.



Steam exchange steam generator (HE)

By means of a steam generator incorporated in the equipment that produces through a heat exchanger operating with mains steam and accumulates clean steam to be used for the sterilization cycles.



Combinations between the different operating modes are possible.



Flush-to-floor execution

Starting from series 6 up to series 24, it is possible to have an execution flush with the floor if there is a particular need to sterilize products, equipment, machines or parts of them which, due to volumes or weights or other, must be introduced directly into the sterilization chamber.



A flap device allows for continuity between the floor and the room.

The infection control culture

The total automation of the sterilization process meets the requirements expressed by the service, increases productivity, improves ergonomics and safety in the workstations and creates an optimal "man-machine" interaction.

All models of our range of autoklaves / sterilizers ...

Steam machines, with a capacity from 1 US to 28 US, are developed to meet the productivity and high efficiency requirements required in sterilization plants.

A single construction concept for all equipment achieves the required results in a repeatable and measurable qualitative process.

The development axes of ours equipment are:

Standardization of construction

Separation of the environment

Homogenization of the heating of the different elements

Removal of "dead spots"

Quick connection of components



Product Overview

VD: Vertical sliding doors

Series	Model	Capacity (It)	Chamber dimensions L x H x P	Overall dimensions L x H x P
1.1VD	SLS.1.1,5.1VD	100	330 x 330 x 995	650 x 1700 x 1190
1.2VD	SLS.1.1,5.2VD	108		650 x 1700 x 1210
2.1VD	SLS.2.2.1VD	15/	330 x 680 x 695	970 x 1870 x 895
2.2VD	SLS.2.2.2VD	156		970 x 1870 x 915
3.1VD	SLS.3.1.1VD	1.47	460 x 460 x 695	1020 x 1870 x 895
3.2VD	SLS.3.1.2VD	147		1020 x 1870 x 915
3.1VD	SLS.3.2.1VD	010	460 x 460 x 995	1020 x 1870 x 1195
3.2VD	SLS.3.2.2VD	210		1020 x 1870 x 1215
3.1VD	SLS.3.3.1VD	074	460 x 460 x 1295	1020 x 1870 x 1495
3.2VD	SLS.3.3.2VD	274		1020 x 1870 x 1515
4.1VD	SLS.4.4.1VD	312	660 x 680 x 695	1400 x 1870 x 975
4.2VD	SLS.4.4.2VD	312		1400 x 1870 x 995
4.1VD	SLS.4.6.1VD	447	660 x 680 x 995	1400 x 1870 x 1275
4.2VD	SLS.4.6.2VD	446		1400 x 1870 x 1295
4.1VD	SLS.4.8.1VD	E01	660 x 680 x 1295	1400 x 1870 x 1575
4.2VD	SLS.4.8.2VD	581		1400 x 1870 x 1595

Accessories for VD and HD models



Internal trolley with two shelves



External trolley fixed height **VD** models



Internal trolley for Biohazard material



Internal trolley with three shelves



External trolley fixed height **HD** models





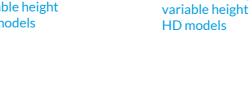


Base grid with shelf



External trolley variable height **VD** models







Sterilization basket 1 US



1 ISO

External trolley

Base grid

HD: Horizontal sliding doors

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Series	Model	Capacity (It)	Chamber dimensions	Overall dimensions
		Oupdoil) (ii)	L x H x P	LxHxP
4.1HD	SLS 4.4.1HD	312	660 x 680 x 695	1690 x 1870 x 975
4.2HD	SLS 4.4.2HD			1690 x 1870 x 995
4.1HD	SLS 4.6.1HD	446	660 x 680 x 995	1690 x 1870 x 1275
4.2HD	SLS 4.6.2HD			1690 x 1870 x 1295
4.1HD	SLS 4.8.1HD	581	660 x 680 x 1295	1690 x 1870 x 1575
4.2HD	SLS 4.8.2HD			1690 x 1870 x 1595
6.1HD	SLS 6.6.1HD	482	660 x 1050 x 695	1690 x 1870 x 975
6.2HD	SLS 6.6.2HD	402		1690 x 1870 x 995
6.1HD	SLS 6.9.1HD	689	660 x 1050 x 995	1690 x 1870 x 1275
6.2HD	SLS 6.9.2HD			1690 x 1870 x 1295
6.1HD	SLS 6.12.1HD	897	660 x 1050 x 1295	1690 x 1870 x 1575
6.2HD	SLS 6.12.2HD	07/		1690 x 1870 x 1595
6.1HD	SLS 6.15.1HD	1105	660 x 1050 x 1595	1690 x 1870 x 1875
6.2HD	SLS 6.15.2HD	1105		1690 x 1870 x 1895
8.1HD	SLS 8.8.1HD	619	660 x 1350 x 695	1690 x 2100 x 975
8.2HD	SLS 8.8.2HD			1690 x 2100 x 995
8.1HD	SLS 8.12.1HD	000	//0 1050 005	1690 x 2100 x 1275
8.2HD	SLS 8.12.2HD	883	660 x 1350 x 995	1690 x 2100 x 1295
8.1HD	SLS 8.16.1HD	1154	660 x 1350 x 1295	1690 x 2100 x 1575
8.2HD	SLS 8.16.2HD			1690 x 2100 x 1595
8.1HD	SLS 8.20.1HD	1.401	660 x 1350 x 1595	1690 x 2100 x 1875
8.2HD	SLS 8.20.2HD	1421		1690 x 2100 x 1895
12.1HD	SLS 12.18.1HD		1060 x 1500 x 995	2700 x 2450 x 1505
12.2HD	SLS 12.18.2HD	1582		2700 x 2450 x 1530
12.1HD	SLS 12.24.1HD		1060 x 1500 x 1295	2700 x 2450 x 1805
12.2HD	SLS 12.24.2HD	2059		2700 x 2450 x 1830
12.1HD	SLS 12.30.1HD		1060 x 1500 x 1595	2700 x 2450 x 2105
12.2HD	SLS 12.30.2HD	2536		2700 x 2450 x 2130
12.1HD	SLS 12.36.1HD		1060 x 1500 x 1995	2700 x 2450 x 2505
12.2HD	SLS 12.36.2HD	3172		2700 x 2450 x 2530
18.1HD	SLS 18.36.1HD		1060 x 2150 x 1295	2700 x 2700 x 1805
18.2HD	SLS 18.36.2HD	2951		2700 x 2700 x 1830
18.1HD	SLS 18.45.1HD		1060 x 2150 x 1595	2700 x 2700 x 2105
18.2HD	SLS 18.45.2HD	3635		2700 x 2700 x 2130
18.1HD	SLS 18.54.1HD		1060 x 2150 x 1995	2700 x 2700 x 2505
18.2HD	SLS 18.54.2HD	4546		2700 x 2700 x 2530
18.1HD	SLS 18.63.1HD		1060 x 2150 x 2495	2700 x 2700 x 3005
18.2HD	SLS 18.63.2HD	5686		2700 x 2700 x 3030
24.1HD	SLS 24.36.1HD		1300 x 2200 x 1295	2700 x 2700 x 1805
24.2HD	SLS 24.36.2HD	3703		2700 x 2700 x 1830
24.2HD	SLS 24.48.1HD			2700 x 2700 x 1030
24.111D	SLS 24.48.2HD	4561	1300 x 2200 x 1595	2700 x 2700 x 2103
24.2HD	SLS 24.46.2HD		1300 x 2200 x 1995	2700 x 2700 x 2130
24.1HD 24.2HD	SLS 24.60.1HD	5705		2700 x 2700 x 2530
24.1HD	SLS 24.72.1HD	7135	1300 x 2200 x 2495	2700 x 2700 x 3005
24.2HD	SLS 24.72.2HD			2700 x 2700 x 3030

In addition to the models described above, equipment with external dimensions and a customized chamber section can be supplied.

The equipment can also be produced with a depth of the chamber, greater or customized, compared to what is indicated in the table.

Tip: We would be happy to validate your laboratory autoclave.

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Range of services



STEAM STERILIZERS + AUTOCLAVES

SHS Series + SLS Series

The new generation of fully automatic SCHLUMBOHM steam sterilizers/autoclaves of the SHS + SLS series is the product of cuttingedge development work and proven, advanced equipment technology for every day use in the medical field. An easy User-interface, energy andresource-saving technology, and optimal accessibility for maintenance and service were key considerations in this pioneering development.



MEDICAL + LABORATORY WASHER DISINFECTORS

SWD Series + SWD LAB Series

The devices of the SWD + SWD LAB series are the ideal washer disinfectors for the safe and efficient reprocessing of surgical instruments, minimally invasive instruments, anesthesia materials, containers, surgical shoes, and laboratory utensils. In addition to an appealing design and compact size, innovative features to enhance process reliability and compliance with DIN EN ISO 15883 were prioritized during their development.



LARGE-CAPACITY WASHER DISINFECTORS

WDC Series

Large-capacity washer disinfectors are designed for the reprocessing of medical devices, as well as large-volume goods such as transport trolleys, containers, surgical shoes, and more. The development of these washer disinfectors took into account aspects such as safety, hygiene, durability, reliability, low maintenance, and resource-saving usage. These devices ensure a high level of operator safety while delivering optimal cleaning results.



STEAM DISINFECTION SYSTEMS

SHD Series

Large-scale disinfection systems utilizing the VSV process are designed for the effective disinfection of large-volume goods, primarily for infection prevention purposes. These systems are particularly suitable for economically disinfecting substantial quantities of solid and porous items such as mattresses and pillows. The latest generation of high-tech solutions has been developed with a focus on economy, resource conservation, and user-friendliness, ensuring maximum operator safety and achieving optimal disinfection results.



BATCH DOCUMENTATION

SCDS

The SCDS batch documentation system provides a comprehensive system solution for complete sterile material documentation. It has been specifically developed to enable fast, simple, and secure documentation that fulfills all legal requirements. All work steps in the treatment process are meticulously recorded, documented, and stored. As a result, the time needed for documenting processes in the sterile material supply department is significantly reduced.

Range of services



MEDICAL WASTE TREATMENT

Truster T-Series

Truster: a technology to be trusted for "biohazard" waste treatment in total safety and respecting eco-sustainability. The purpose of biohazard waste treatment must be to sterilize them and make them unidentifiable and non-reusable. A combined process of mechanical grinding and saturated steam sterilization without any risk of aerobic pollution and of bad smell emission.



VALIDATION

Quality assurance during reprocessing

Due to our high professional standards in the fields of cleaning, disinfection, and sterilization, we have a team of qualified application engineers available to assist you. When validating treatment processes, our focus is on implementing quality assurance measures and ensuring the requirement of reproducible processes in the treatment of medical devices. We are here to help you analyze and optimize your treatment process.



CARE COMBINATIONS

AF2 Series

Bedpan washers and care combinations are designed for fully automatic emptying, cleaning, and thermal disinfection of bedpans, urine bottles, and other vessels used for human excreta. These systems fully comply with the requirements of the German Medical Devices Act (MPG), the Medical Devices Operator Ordinance (MPBetreibV), DIN EN 15883 Parts 1 and 3, and the recommendations of the Robert Koch Institute (RKI) on "Requirements for hygiene in the reprocessing of medical devices".



STAINLESS STEEL FURNITURE

Functional furniture

Our medical functional furniture, crafted with high-quality materials and excellent workmanship, is renowned for its adherence to the highest hygiene standards, extensive functionality, and individual adaptability. The use of stainless steel grade 1.4301 ensures not only resistance to disinfectants but also a prolonged lifespan compared to other materials.



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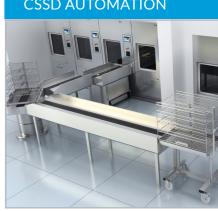
OR-TABLES / OR-LIGHTS



TABLE TOP STERILIZERS



CSSD AUTOMATION



Europe-wide 24-hour emergency service

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