



# MEDICAL STEAM STERILIZERS SHS



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

SHS

# 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 management in Hamburg handles accepting orders and the scheduling of all field employees

Tobias Schlumbohm  
CEO

Hans-Joachim Schlumbohm  
Shareholder

## SHS PRODUCT INFORMATION

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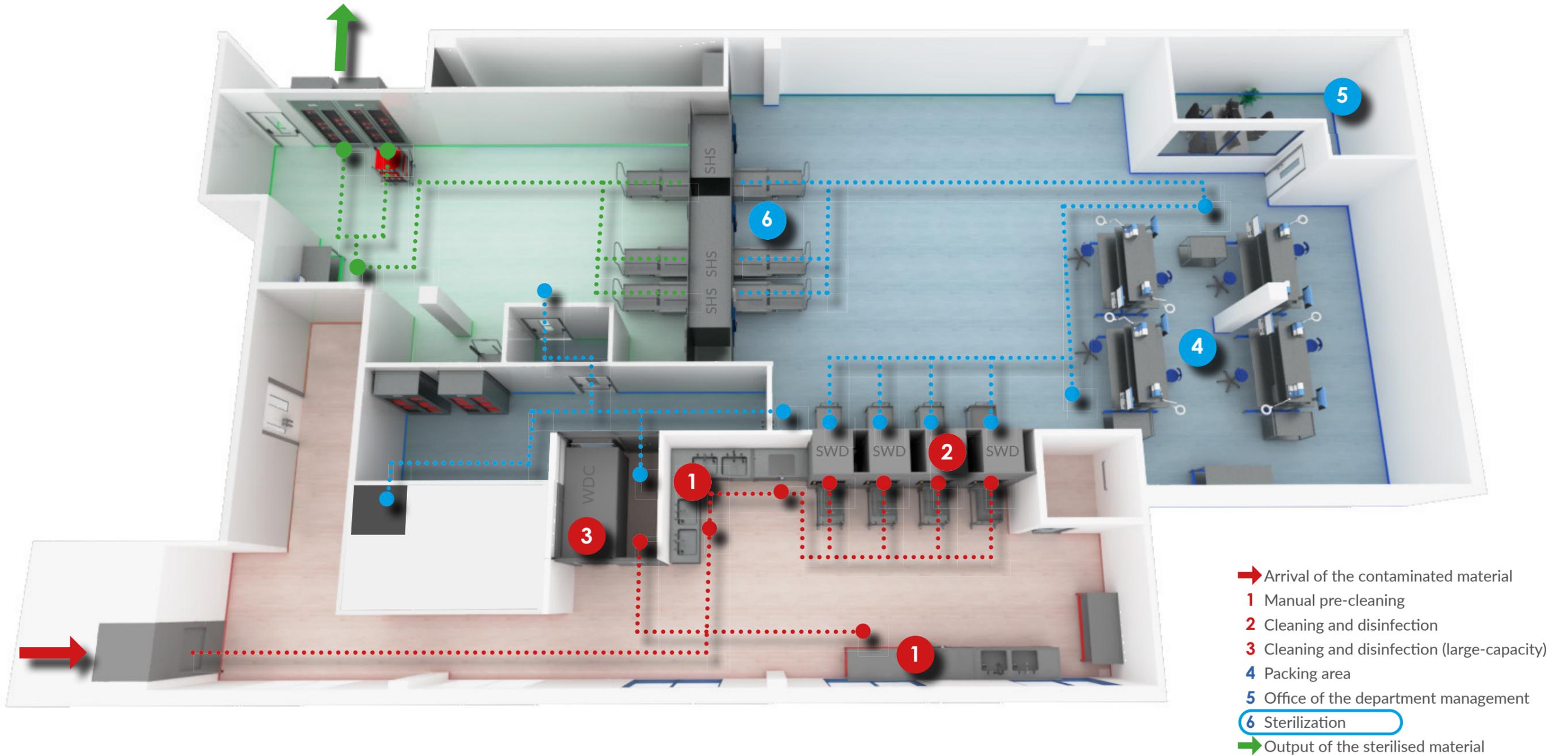


### INNOVATIVE NEW PRODUCTS PRESENTED IN BRIEF THE NEW GENERATION OF OUR FULLY AUTOMATIC MEDICAL STEAM STERILIZERS

## Medical Steam Sterilizers

The new generation of fully automatic SCHLUMBOHM steam sterilizers of the SHS series are the result of state-of-the-art development work and proven, mature device technology for daily use in the medical sector. User-friendliness as well as energy and resource-saving technology were just as much a priority in the future-oriented development as optimum accessibility for maintenance and service.

Equipped with high-quality, commercially available components, our sterilizers combine a high degree of operational safety with innovative technologies to reduce operating costs. The devices meet all the requirements of a market in which maximum safety, absolute reliability and reproducible treatment processes are indispensable.



The SCHLUMBOHM steam sterilizers comply with DIN EN 285 and are suitable for the preparation of solid and porous goods as well as hollow bodies in the appropriate packaging. The devices are CE marked according to Directive 93/42 EEC, tested and approved by a notified body.

# Technical Specifications



- Air Check -  
To deactivate inert gases, the steam quality is checked.



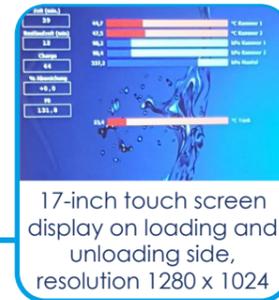
Programmable SIEMENS PLC for redundant safety in all operating phases.



Frame structure and cladding in AISI 304 stainless steel.



Chamber, steam jacket and chamber doors optionally in stainless steel AISI 316L or AISI316Ti. Chamber and doors with electro-polished surface.



17-inch touch screen display on loading and unloading side, resolution 1280 x 1024

- Water saving system -  
The replenishment of cold water is carried out according to demand and disconnected from the mains for the respective programme phases.



- Automatic Bowie & Dick Test -  
Reliable, cost-effective monitoring and documentation of values and results without external aids.



All pipework is made of AISI 316L stainless steel using TIG orbital welding. All connections optionally in Tri-Clamp design.



- Waste water cooling -  
Process water and condensate are brought together in a collecting tank, from where they are thermostatically regulated and fed into the floor drain.



- Bioseal -  
Optional airtight partitioning of the loading and unloading area.



Guaranteed operational reliability through high-quality components. High availability of spare parts due to commercially available makes of component parts



Claw vacuum pump (dry vacuum) - 95% water saving compared to conventional systems (200l per batch). Only 30 min. programme time with full load including drying.



Steam supply optionally via electric steam generator (stainless steel AISI 316L), pure steam or heating steam/pure steam heat exchanger. Optional combination of steam supply and steam management possible.

# Product overview

## VD Series: Vertical door guide

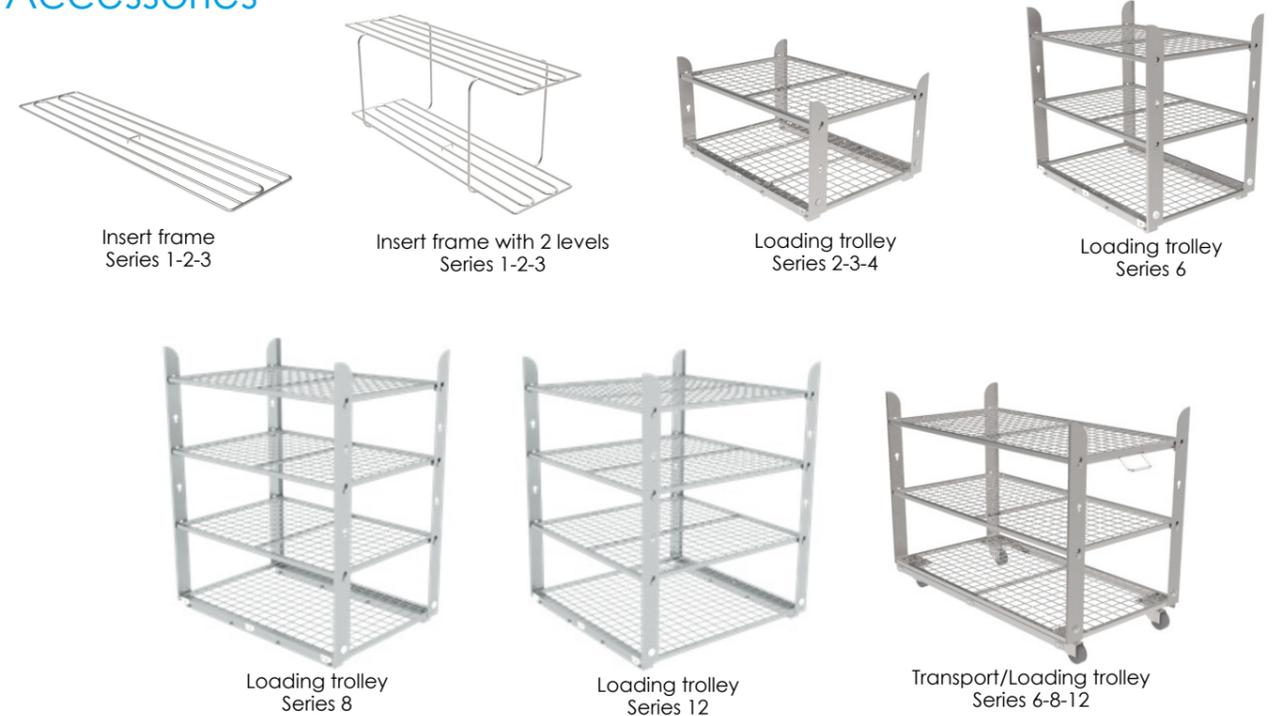
Series	Model	Liters	SIE	Chamber dimensions (WxHxD)	Outer dimensions (WxHxD)
1.1VD	SHS.1.1.1VD	76	1	330 x 330 x 695	650 x 1700 x 890
1.2VD	SHS.1.1.2VD				650 x 1700 x 910
1.1VD	SHS.1.1.5.1VD	108	1.5	330 x 330 x 995	650 x 1700 x 1190
1.2VD	SHS.1.1.5.2VD				650 x 1700 x 1210
2.1VD	SHS.2.2.1VD	156	2	330 x 680 x 695	970 x 1870 x 895
2.2VD	SHS.2.2.2VD				970 x 1870 x 915
2.1VD	SHS.2.3.1VD	223	3	330 x 680 x 995	970 x 1870 x 1195
2.2VD	SHS.2.3.2VD				970 x 1870 x 1215
3.1VD	SHS.3.1.1VD	210	1 ISO	460 x 460 x 995	1020 x 1870 x 1195
3.2VD	SHS.3.1.2VD				1020 x 1870 x 1215
3.1VD	SHS.3.2.1VD	217	2 ISO	460 x 680 x 695	1020 x 1870 x 895
3.2VD	SHS.3.2.2VD				1020 x 1870 x 915
3.1VD	SHS.3.3.1VD	274	3 ISO	460 x 460 x 1295	1020 x 1870 x 1495
3.2VD	SHS.3.3.2VD				1020 x 1870 x 1515
4.1VD	SHS.4.4.1VD	312	4	660 x 680 x 695	1400 x 1870 x 975
4.2VD	SHS.4.4.2VD				1400 x 1870 x 995
4.1VD	SHS.4.6.1VD	446	6	660 x 680 x 995	1400 x 1870 x 1275
4.2VD	SHS.4.6.2VD				1400 x 1870 x 1295
4.1VD	SHS.4.8.1VD	581	8	660 x 680 x 1295	1400 x 1870 x 1575
4.2VD	SHS.4.8.2VD				1400 x 1870 x 1595
4.1VD	SHS.4.10.1VD	715	10	660 x 680 x 1595	1400 x 1870 x 1875
4.2VD	SHS.4.10.2VD				1400 x 1870 x 1895
4.1VD	SHS.4.12.1VD	895	12	660 x 680 x 1995	1400 x 1870 x 2275
4.2VD	SHS.4.12.2VD				1400 x 1870 x 2295

## HD Series: Horizontal door guide

Series	Model	Liters	SIE	Chamber dimensions (WxHxD)	Outer dimensions (WxHxD)
4.1HD	SHS 4.4.1HD	312	4	660 x 680 x 695	1690 x 1870 x 925
4.2HD	SHS 4.4.2HD				1690 x 1870 x 945
4.1HD	SHS 4.6.1HD	446	6	660 x 680 x 995	1690 x 1870 x 1225
4.2HD	SHS 4.6.2HD				1690 x 1870 x 1245
4.1HD	SHS 4.8.1HD	581	8	660 x 680 x 1295	1690 x 1870 x 1525
4.2HD	SHS 4.8.2HD				1690 x 1870 x 1545
4.1HD	SHS 4.10.1HD	715	10	660 x 680 x 1595	1690 x 1870 x 1825
4.2HD	SHS 4.10.2HD				1690 x 1870 x 1845
4.1HD	SHS 4.12.1HD	895	12	660 x 680 x 1995	1690 x 1870 x 2225
4.2HD	SHS 4.12.2HD				1690 x 1870 x 2245
6.1HD	SHS 6.6.1HD	482	6	660 x 1050 x 695	1690 x 1870 x 925
6.2HD	SHS 6.6.2HD				1690 x 1870 x 945
6.1HD	SHS 6.9.1HD	689	9	660 x 1050 x 995	1690 x 1870 x 1225
6.2HD	SHS 6.9.2HD				1690 x 1870 x 1245
6.1HD	SHS 6.12.1HD	897	12	660 x 1050 x 1295	1690 x 1870 x 1525
6.2HD	SHS 6.12.2HD				1690 x 1870 x 1545
6.1HD	SHS 6.15.1HD	1105	15	660 x 1050 x 1595	1690 x 1870 x 1825
6.2HD	SHS 6.15.2HD				1690 x 1870 x 1845
6.1HD	SHS 6.18.1HD	1382	18	660 x 1050 x 1995	1690 x 1870 x 2225
6.2HD	SHS 6.18.2HD				1690 x 1870 x 2245
8.1HD	SHS 8.8.1HD	619	8	660 x 1350 x 695	1690 x 2100 x 925
8.2HD	SHS 8.8.2HD				1690 x 2100 x 945
8.1HD	SHS 8.12.1HD	883	12	660 x 1350 x 995	1690 x 2100 x 1225
8.2HD	SHS 8.12.2HD				1690 x 2100 x 1245
8.1HD	SHS 8.16.1HD	1154	16	660 x 1350 x 1295	1690 x 2100 x 1525
8.2HD	SHS 8.16.2HD				1690 x 2100 x 1545
8.1HD	SHS 8.28.1HD	1956	28	660 x 1350 x 2195	1690 x 2100 x 2425
8.2HD	SHS 8.28.2HD				1690 x 2100 x 2445
12.1HD	SHS 12.30.1HD	2282	30	1060x1350x1595	2490 x 2100 x 1825
12.2HD	SHS 12.30.2HD				2490 x 2100 x 1845
12.1HD	SHS 12.36.1HD	2855	36	1060x1350x1995	2490 x 2100 x 2225
12.2HD	SHS 12.36.2HD				2490 x 2100 x 2245
12.1HD	SHS 12.48.1HD	3570	48	1060x1350x2495	2490 x 2100 x 2725
12.2HD	SHS 12.48.2HD				2490 x 2100 x 2745

Steam supply variants: E: Electric steam generator, S: Pure steam, according to DIN EN 285-Annex B, ES: Pure steam, switchable to electric steam generator, HE: Heating steam/pure steam heat exchanger.  
In addition to the standard models, customer-specific chamber sizes and dimensions can of course also be implemented. The device dimensions may vary depending on the equipment.

## Accessories



## Technical specifications

The SHS line of saturated steam sterilizers for hospital 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.

This equipment, designed for use in hospital and medical clinics, through integrated safety devices and components, apply the concept of redundancy. The entire product line is CE marked as Medical Device.

Savings is one of the aims that we set ourselves in the design phase, savings in operating consumption and maintenance with devices, solutions and components of high quality and reliability and long service life.

Water savings, compared to similar equipment, is reduced by 95%, energy consumption is reduced by 40%. More than 80% of the equipment is stainless steel, therefore 100% recoverable; the others commercial components are always recoverable and recyclable according to the procedures provided by the manufacturers.



### 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.

All maintenance phases must observe specific safety protocols.

### Configurable vacuum device

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



### BIOSEAL

The "Bioseal" internal barrier installed in autoclaves with pass-through executions to completely seal and separate the clean and sterile environment. The Bioseal is made of AISI 304 stainless steel and tightly welded on the frame structure and on the chamber.



### 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.



## Technical specifications

### Electronic B&D test

Electronic B&D test performed through integrated device for:

Avoid 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).



### 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).



### Sterilization cycles

Sterilization cycle at 134 ° C for textile packaging in containers, with medical paper or in envelopes.

Sterilization cycle at 121 ° C for rubber packaging in containers, with medical paper or in envelopes.

Sterilization cycle at 134 ° C for instruments packaging in containers, with medical paper or in envelopes.

Sterilization cycle at 134 ° C for heavy loads of surgical instruments packaging in containers.

Sterilization cycle at 134 ° C for prions (Creutzfeldt-Jakob)

Steam penetration test cycle (Bowie & Dick)

Automatic electronic vapor penetration test cycle according to EN 285

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

User cycle to program 100 new cycles

Flash cycle at 134 ° C (to be validated with the load by the user)

Free setting of user cycles with availability of repeated calls to execution.

Scheduled standard sterilization cycles validated in compliance with the UNI EN 285 standard.

# 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 cutting-edge development work and proven, advanced equipment technology for everyday use in the medical field. An easy User-interface, energy and resource-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

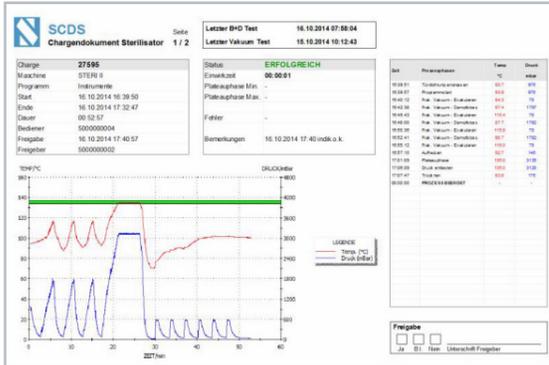
Large-capacity washer disinfectors are designed for the reprocessing of medical devices, as well as large-volume goods such as transport trolleys, containers, surgical shoes, and more. The development of these washer disinfectors took into account aspects such as safety, hygiene, durability, reliability, 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.

## OR-TABLES / OR-LIGHTS



## TABLE TOP STERILIZERS



## CSSD AUTOMATION



... and more. Please contact our sales department. We will find the right solution for you.

# Europe-wide 24-hour emergency service

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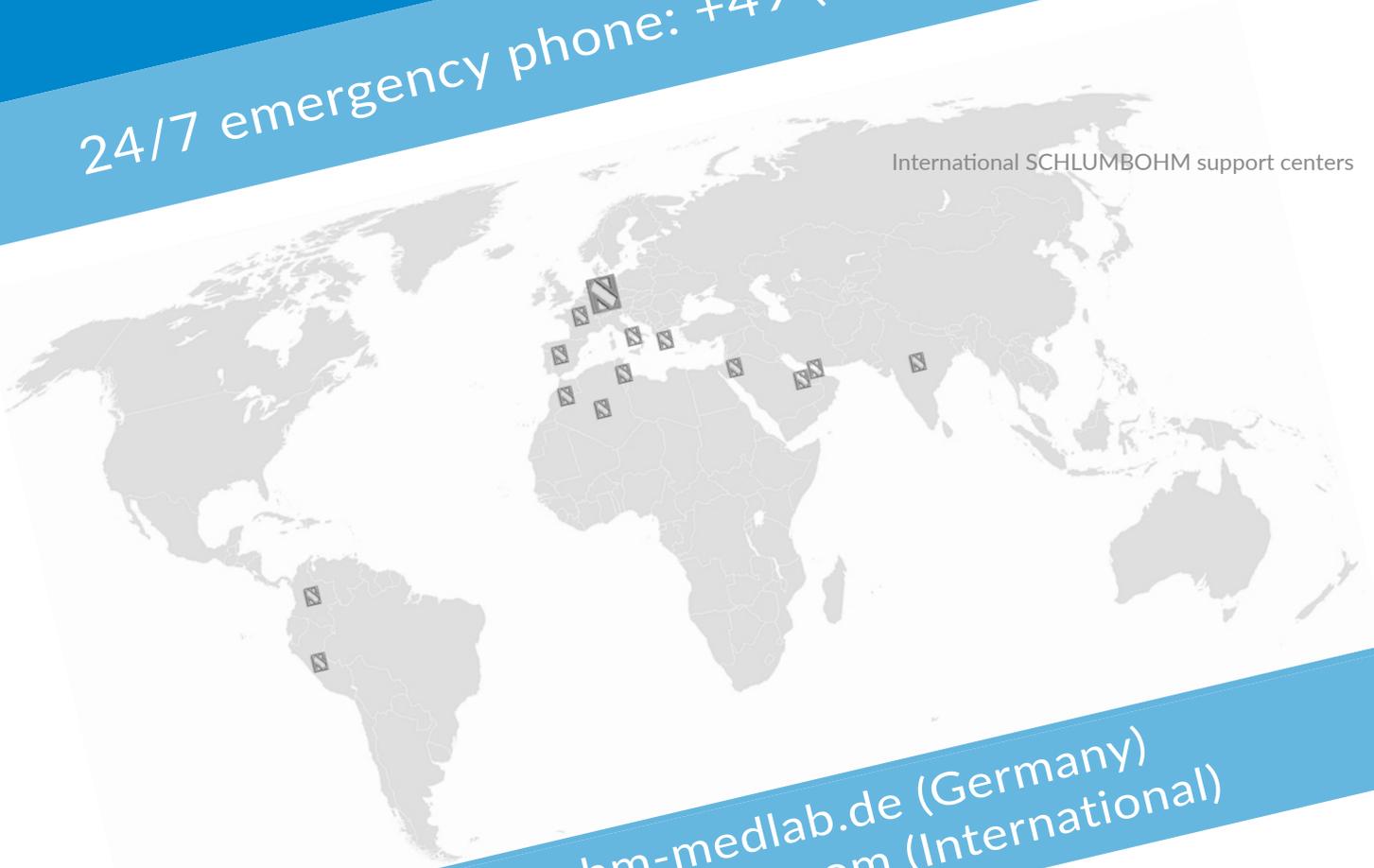
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STAMP



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International SCHLUMBOHM support centers

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EN ISO 14001 CERTIFIED