SCHLUMBOHM

Device for safe treatment of biohazard and infectious waste

TRUSTER

PASSION IN HEALTH
over 45 years
SCHLUMBOHM
GERMAN ENGINEERING

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

TRUST

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

Tobias Schlumbohm
CEO

Hans-Joachim Schlumbohm
Shareholder

TRUSTER PRODUCT INFORMATION

INNOVATIVE NEW PRODUCTS PRESENTED IN BRIEF
THE NEW GENERATION OF OUR “TRUSTER” T-SERIES MEDICAL WASTE TREATMENT

Truster: a technology to be trusted for “biohazard” waste treatment in total safety and respecting eco-sustainability

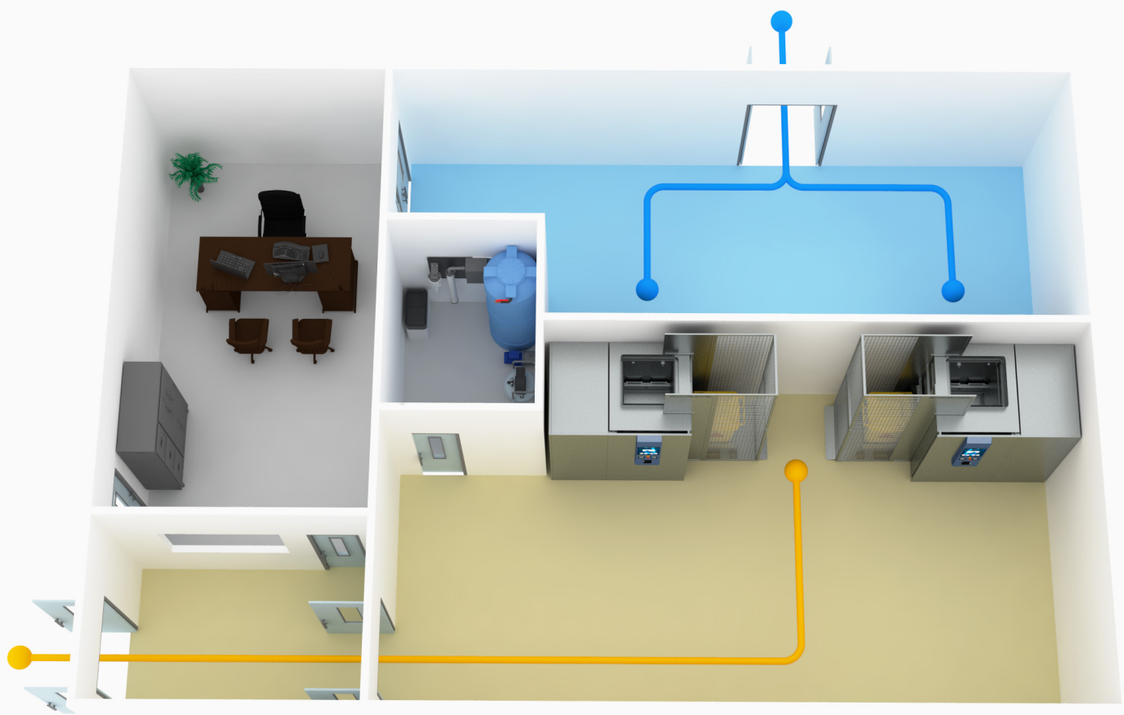
The purpose of biohazard waste treatment must be to sterilize them and make them unidentifiable and non-reusable: with Truster all this takes place in a completely hermetic environment through a combined process of mechanical grinding and saturated steam sterilization without any risk of aerobic pollution and of bad smell emission.
Truster consists of a vertical cascade starting from the top of a loading door, a preload chamber, a mechanical grinder group with pushers, a collection chamber with a draining trolley and a drainage port. Being a single environment, all these parts are involved in the phases of each sterilization process and then will eventually be sterilized.

Main operating characteristics of Truster T-Series

- Combined Shredding and sterilization treatment to guarantees the quality of infectious waste treatment.
- The treatment, which takes place in a hermetically sealed environment, eliminates the risk of aerosol transmission and the emission of unpleasant odors.
- Mechanical grinding (shredding) is extremely effective and reduces waste into small pieces, no longer identifiable which will enable guarantee steam penetartion during sterilization process to enable steam to touch directly all microrganism and guarantee no any physical barrier between steam and microrganisms.
- Shredding into small pieces of the waste favors the elimination of the air in the preliminary vacuum phase and the penetration of saturated steam in the following phase, guaranteeing the effectiveness of the sterilization process and eliminating the risk of biological pollution or transmission of infections
- The device is made with innovative construction techniques, developed specifically for this type of application, with safe sterile drainage discharges and safe sterile air removal (pre filtered and sterilized air) to achive a controlled emissions, so as to avoid the risks of environmental pollution.
- The machine configuration is acting as pass through of the equipment allows a unidirectional waste path and allows to separate the dirty area where it is loaded from the clean area where treated safe waste in unloaded , to guarantee no cross contamination between untreated waste and treated waste.
- The final drying phase leaves the waste as dry (not wet) eliminating moisture residues and unpleasant odors. During this phase the weight is reduced up to 20% compared to the original one.
- Mechanical grinding (shredding) allows a volume reduction up to 80% compared to the original one.
- Being a static device having the only moving part placed inside the sterilization chamber, during use it is safe, away of operators, silent and compact compatible with the work environment.
- The floor-level installation of the chamber allows an easy handling of the collection trolley both in the phase of insertion in the chamber and of discharge with the treated material

“Biohazard” waste

Hospitals, Clinics, Nursing Homes, Dental Centers, Research Centers and other Health Centers are generally producers of potentially infectious hazardous waste known as “Biohazard”.
All materials that directly or indirectly are in contact with the blood or the inside of the human body and are not recoverable or reusable are included in the biohazard waste classification. The departments where most biohazard waste is produced in hospitals are in terms of volumes: operating block, dressing rooms, infectious departments, intensive care units and inpatient departments. According to the statistics the average ratio that we can consider between volume weight is 1 to 10, ie one kilogram corresponds to 10 liters.



Waste flow

A “biohazard” waste treatment center must provide equipment, flows, routes, procedures and controls that must be put in place in order to be able to credit the treatment of all the material as safe. Truster, being designed to carry out the processing cycle of pass-through materials, actually creates a dirty area separated from the clean area, eliminating the risk of contamination or exchange between treated or untreated biohazard material.

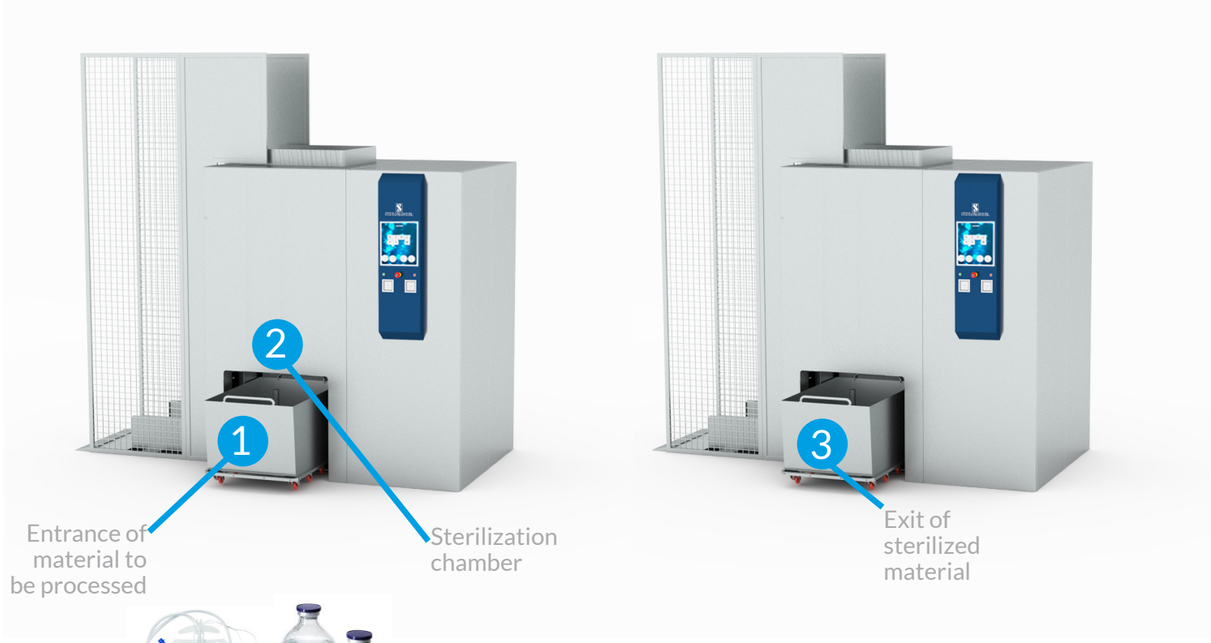
Treatment cycle for solids

Biohazard waste is placed in the load chamber through the door on top of Truster. After completing the loading the door is automatically closed enabling hermetically sealing, the machine run a general self-diagnosis on the functional aspects , shredder cuts waste into small pieces , air removal from waste load begins the phase using the waterless vacuum pump compatible with steam. The removal of air from shredded waste promotes the penetration of saturated steam, an optimal condition for proper sterilization.

Before passing from the pump and being discharged to the outside, the air is sterilized by an in-line thermal treatment that works at a temperature of 300 ° C.
The temperature and the transit time of the air are controlled by an independent sensors and verified by the formula of the F0; therefore the air discharged in the environment reaches a SAL of 10-6, that is the sterilization level.
The next phase is the introduction of saturated steam into the chamber at the sterilization temperature of 134 ° C and the maintenance of a contact time of 10 minutes with parametric control through independent sensors and with the formula of the F0, this phase permet It reaches a SAL of 10-6 and that is the level of sterilization. The final phase is that of drying which removes moisture from waste leaving it dry and free from unpleasant odors.

Treatment cycle for liquids

Liquid waste, contained in hermetically sealed containers (or not), is placed inside the collection trolley and introduced into the Truster sterilization chamber through the drain port. The appliance, after hermetically blocking the accesses and performed a general self-diagnosis on the functional aspects, begins the vacuum phase to eliminate air from the material. The vacuum is produced by an innovative dry-running mechanical pump compatible with steam. The removal of air from the material promotes the penetration of saturated steam, an optimal condition for correct sterilization.



Before

After

The air, as for the solid cycle, follows a series of treatments to eliminate the risks inherent in the transmission of bacteriological pollution.
The next phase is the introduction of saturated steam into the chamber at the sterilization temperature of 121 ° C and the maintenance of a contact time of 25 minutes with parametric control through independent sensors and with the formula of the F0, this phase allows to reach a SAL of 10-6 and that is the level of sterilization.
During the final drying phase, to preserve the integrity of the containers with the liquids inside and eliminate the humidity, compressed air is introduced and at the same time the vacuum is generated.

The specific cycle for blood bags provides the same treatment to which liquid waste is subjected.
The result of this treatment is sterilization and the consequent coagulation of the blood contained in the bags.
Subsequently it is possible to proceed with a new cycle of sterilization and shredding for the material that has become solid, reducing the blood bags in small and unidentifiable pieces.

Before

After

T10

T25

T50

T100

Ergonomics and Usability

Ergonomics and usability are central to the Truster project both from the management point of view and from the operative point of view, applying the concept of interaction between the elements of a system and function for which they are designed. The theory, the principles, the data and the methods applied to the design in order to improve the satisfaction, the set of system pre-settings and the interaction between individuals and technology. The quality of the relationship between user and equipment is determined by the level of ergonomics and usability: the most important requirement for determining this level is safety, followed by adaptability, comfort, pleasantness, comprehensibility, operability, perception, ease of learning, and so on. The relationship between the user and Truster has a significant influence on the efficiency, efficiency and satisfaction of the same person and to improve the overall performance.

Automatic loading device

The loading of the waste in the pre-chamber for the T25, T50 and T100 models can take place by means of a ladder or by means of an automatic loading system that uses 240-liter collection trolleys compliant with the UNI EN 840 standard. For the T50 and T100 models the automatic loading system is available in the version that uses 770 liter trolleys compliant with the UNI EN 840 standard. The system manages the lifting, overturning, emptying and returning to the ground of the trolley. The automatic loading device eliminates the risk of direct handling of waste and the risk of any breakages and / or losses from containers and / or bags.
As an alternative to the automatic system, a ladder that allows manual loading can be used for all models of the series.
This system meets the requirements for these types of sizes and productivity of equipment.

Truster: automatic loading of waste

1

The mobile waste collection container containing the waste to be treated is transported manually to the loading area.

2

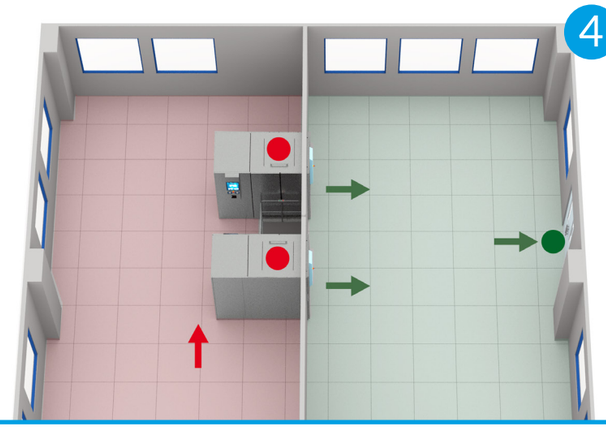
The mobile waste collection container is inserted inside the elevator. The device of security prevents the start of the loading phase if the door is not properly closed.

3

Loading the container of waste collection takes place automatically.

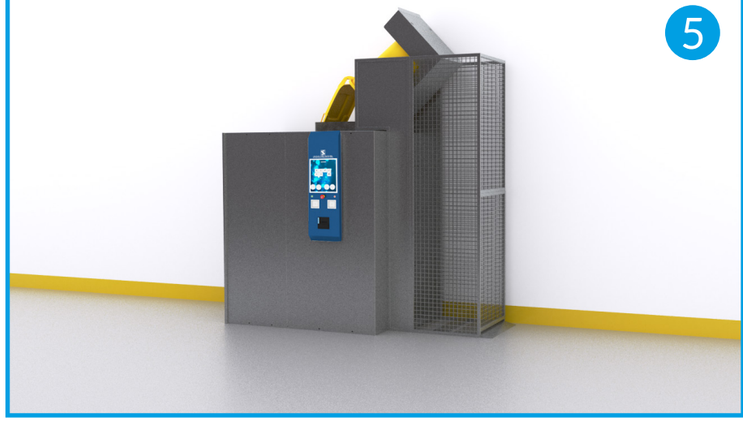
The mobile waste collection container automatically reverses the contents inside the pre-chamber.

4



The mobile waste collection container is routed inside of the pre-chamber thanks to the guided movement of the device.

5



At the end of the cycle the shredded and sterilized material comes out from the clean side of Truster.

6

Range of products

Model	Chamber Volume	Production Capacity	Weight/Volume Ratio	Waste Volume Reduction
T10	155 liters	10-16 Kg/h	1/10	1/5
T25	270 liters	25-35 Kg/h	1/10	1/5
T50	614 liters	50-60 Kg/h	1/10	1/5
T100	1030 liters	100-120 Kg/h	1/10	1/5

Model	Chamber dimensions	Device Dimensions L x H x P	Overall Dimensions with Loading Device L x H x P	E- Electric S - Steam ES- Electric+Steam
T10	520x520x700	1500x1200x950	2450X2480X1200	E-S-ES
T25	600x600x750	1840X1960X1230	2940X2780X1230	E-S-ES
T50	850x850x850	2400x1960x1600	3350x3400x1600	E-S-ES
T100	1100x1100x850	2900X1960X1950	3850X3400X1950	E-S-ES

Environmental impact, energy saving and recyclability

Applying eco-design to preserve the environment in which we live has made it possible to significantly reduce consumption and environmental pollution during the entire life cycle of Truster.
Starting from the idea of producing equipment that is sustainable and of low environmental impact, significant and measurable objectives have been set and achieved that enhance its performance.
The significant saving in the consumption of electricity and water was achieved through a series of technical innovations built into the design phase as well as recyclability being composed of 80% stainless steel and therefore totally reusable and the remaining 20% of the components are recyclable according to the individual procedures indicated by the suppliers.

Construction standards and certifications

The equipment of the Truster line is built according to the latest European and international standards:

2006/42 / EC Machinery Directive
2014/68 / EU Pressure Equipment Directive (PED)
2009/125 / EC, Eco-Design Directive (ERP)
2014/35 / EU Low Voltage Directive
2014/30 / EU Electromagnetic Compatibility

The operation of the Truster line equipment complies with:

UNI EN ISO 285: 2016 (specifies the requirements and tests of the large steam sterilizers)
UNI EN ISO 17665-1: 2016 (specifies the development, validation and testing of routine)
UNI EN ISO 9001: 2015 (Quality Management System)
UNI CEI EN ISO 13485: 2012 (Quality Management System for DM)

Truster for the treatment of high productions of biohazard waste

To meet the need to process a large amount of biohazard waste, Truster offers a range of products designed for the shredding and sterilization of large and heavy loads.
The Truster T200 model is designed to handle heavy loads in complete autonomy, providing the same guarantees as small products, maintaining the operating conditions unchanged.

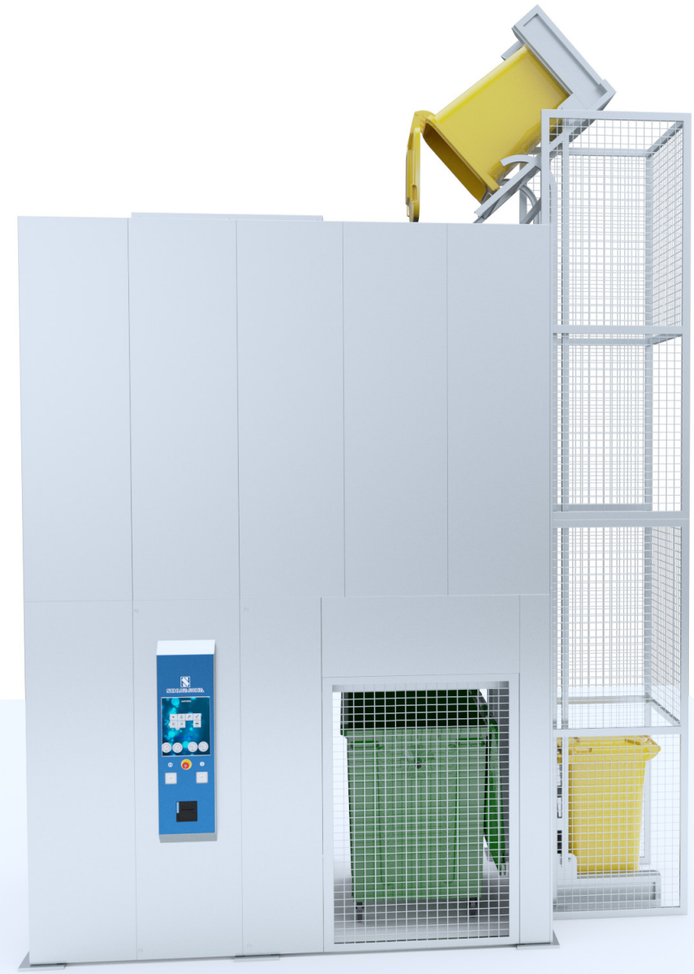
The technical solutions adopted in the Truster T200 model are suitable for the quantity of load managed by the equipment, making the operations easy for users to perform. In particular, the shredded unloading phase involves the use of a transport trolley which, placed below the treatment chamber, automatically receives the material at the end of the sterilization cycle.

Despite the high productivity of the Truster T200, a greater presence of personnel is not required for its use during all stages of the process.

T200 specs.

Model	Chamber Volume	Production Capacity	Weight/Volume Ratio	Waste Volume Reduction
T200	2420 liters	200 Kg/h	1/10	1/5

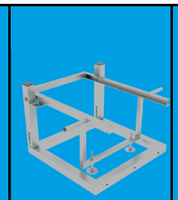
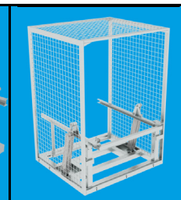
Model	Chamber dimensions	Device Dimensions L x H x P	Overall Dimensions with Loading Device L x H x P	E- Electric S - Steam ES- Electric+Steam
T200	1100x1100x2000	4100X4320X1820	4100X5800X2800	E-S-ES



Accessories Configuration

	 T.1100	 T.770	 T.240	 T.120	 ALS.1100	 ALS.770	 ALS.240
Model	Mobile sterilized waste trolley in high density polyethylene. 4 Rubber wheels. Rear latch. Capacity 1100 liters. Complies with EN 840.	Mobile sterilized waste trolley in high density polyethylene. 4 Rubber wheels. Rear latch. Capacity 770 liters. Complies with EN 840.	Mobile sterilized waste trolley in high density polyethylene. 4 Rubber wheels. Rear latch. Capacity 240 liters. Complies with EN 840.	Mobile sterilized waste trolley in high density polyethylene. 4 Rubber wheels. Rear latch. Capacity120 liters. Complies with EN 840.	System for automatic loading of waste in the pre-chamber. 770 liter trolley	System for automatic loading of waste in the pre-chamber. 240 liter trolley	System for automatic loading of waste in the pre-chamber. 120 liter trolley
T10	✗	✗	✓	✓	✗	✗	✓
T25	✗	✗	✓	✓	✗	✗	✓
T50	✗	✗	✓	✓	✗	✓	✓
T100	✗	✓	✓	✓	✓	✓	✓
T200	✓	✓	✓	✓	✓	✓	✓

	 ALS.120	 S.C.	 LIFT	 M.W.T.	 M.D.W.	 M.B.W.	 R.M.C.D
Model	System for automatic loading of waste in the pre-chamber. 120 liter trolley	Ladder for manual loading of waste inside the pre-chamber	Pantograph hoist that leads the user toan egonomic loading height of the prechamber.	Device for washing mobile trolleys for garbage collection.	Device for the detection of metals in waste.	Device to weigh the material before make the loading operations.	Remote control equipment.
T10	✓	✓	✗	✓	✓	✓	✓
T25	✓	✓	✓	✓	✓	✓	✓
T50	✓	✓	✓	✓	✓	✓	✓
T100	✓	✓	✓	✓	✓	✓	✓
T200	✓	✗	✗	✓	✓	✓	✓

	 M.U.S	 A.U.S	 A.L.W	 A.C.T	 A.W.T
Model	Manual unloading system for treated waste.	Automatic unloading system for treated waste.	Transfer system for treated waste	Automatic compaction device	Automatic washing and disinfection device
T10	✓	✗	✗	✓	✓
T25	✓	✓	✗	✓	✓
T50	✗	✓	✓	✓	✓
T100	✗	✓	✓	✓	✓
T200	✗	✗	✗	✓	✓

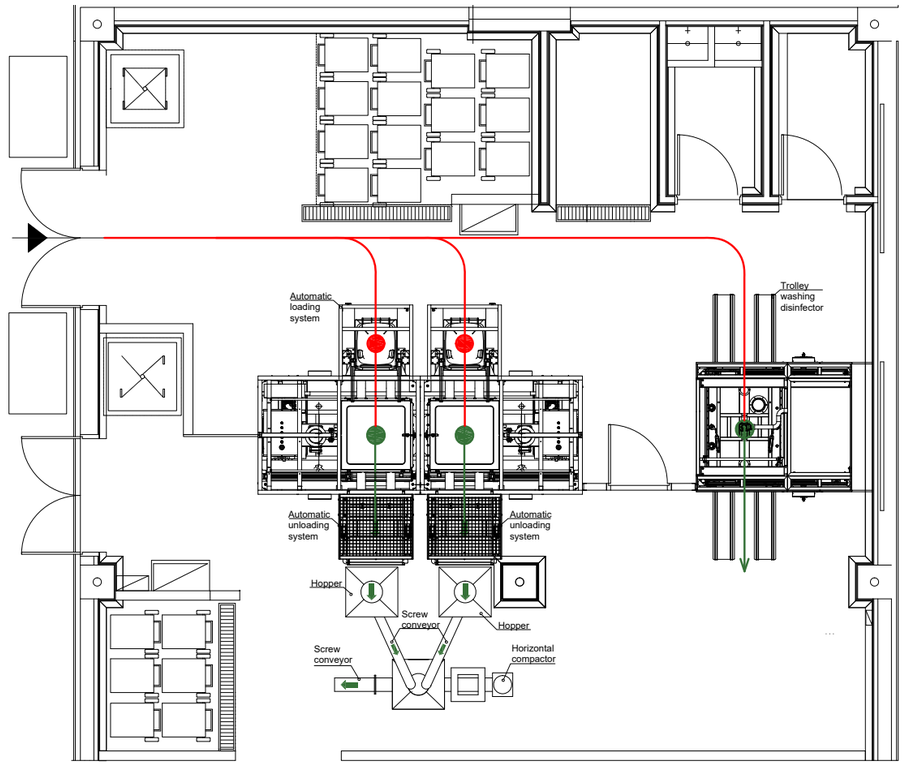
Each model can be configured with accessories marked with ✓
Accessories marked with ✗ are not available for the selected model.

Automation in the treatment of hazardous waste

Eliminating the risks arising from the handling of hazardous waste during treatment must be an important aspect to pay attention to for the safety standards of operators.
The more important the production capacity of the plant, the more justifiable the automation.
All Truster models can be equipped with automation choosing between different levels of automation: from the simple loading system to complete automation of the phases including the compaction of sterilized and shredded waste.

The automations are divided into:
Automatic loading device: ALS model
Automatic unloading device: AUS model
Automatic transport device: ALW model
Automatic compaction device: ACT model

All devices are of the electromechanical type; compatible with the type of material to be handled, washable and disinfectable in compliance with hygiene.



Washing and disinfection in the treatment of hazardous waste

To avoid risks of contamination from the handling of accessories involved in the hazardous waste treatment cycle, different types of equipment can be used; depending on the production capacity of the plant. Two solutions are available: manual washing and disinfection or automatic washing and disinfection.
In our range of products there is a manual washing equipment that uses a high pressure solution for washing and temperature or chemical solution for disinfection.
Alternatively, it is possible to switch to an automatic solution through a washing cabin using the same techniques.
The solutions that our range provides are:
Manual washing and disinfection device: MWT model
Automatic washing and disinfection device: AWT model

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

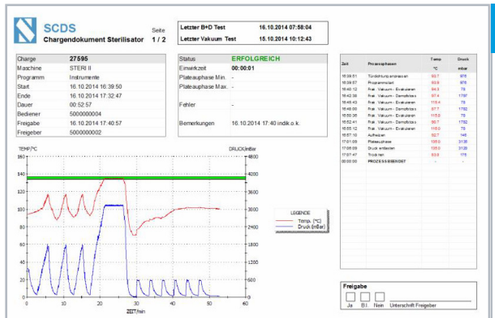
WDC Series

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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STAMP

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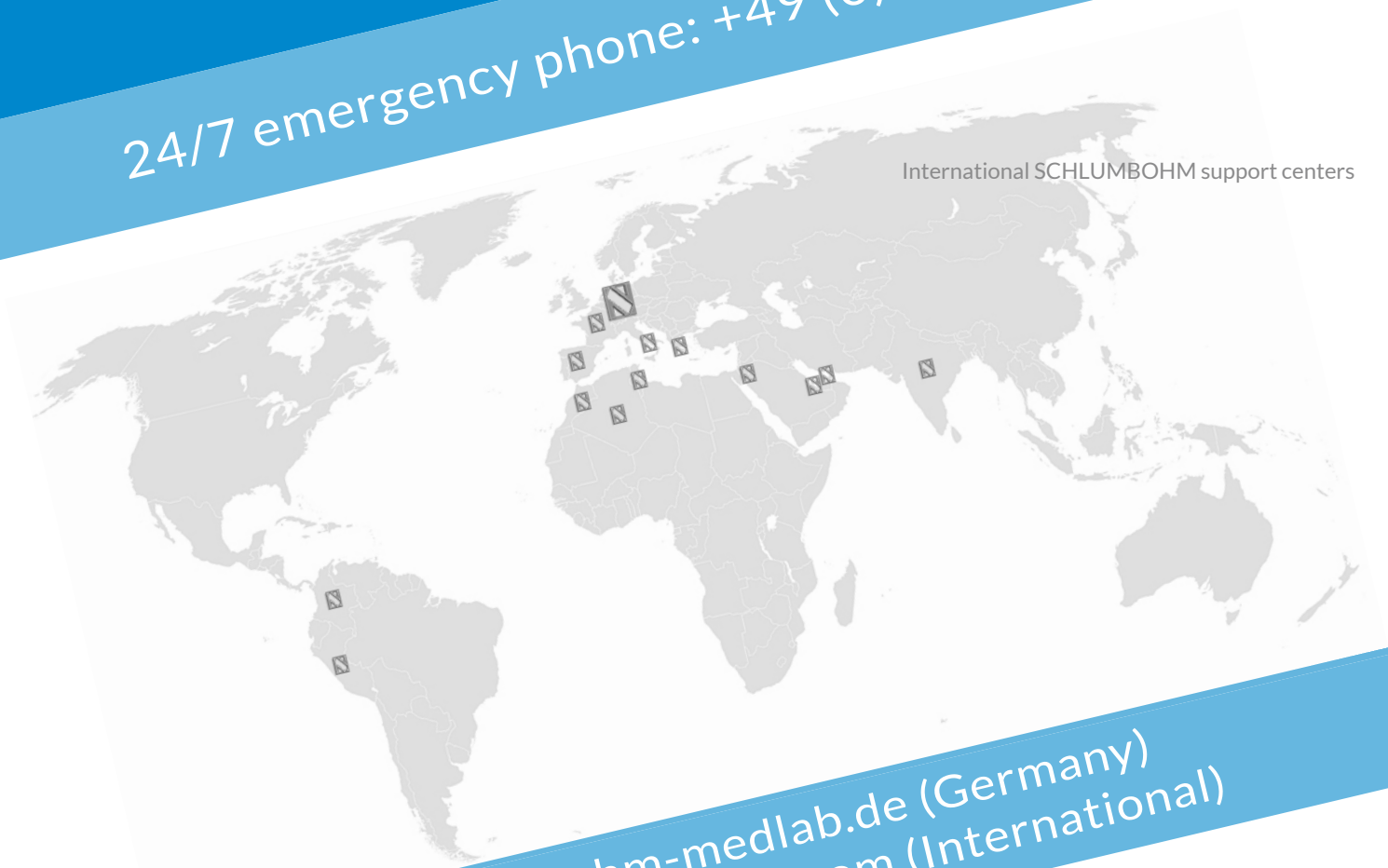

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