# MST-H

## The steam sterilizer for maximum capacity

Belimed
Infection Control

# Developed for the safe sterilization of medical devices

The MST-H steam sterilizer enables workflow optimization by maximizing throughput and contributes to the economical use of resources.

The 9–18 SGU capacity of the MST-H series enables the sterilization of large load quantities in short batch times.

With a wide range of auxiliaries, the sterilizer is able to flexibly adapt to the needs of the CSSD.

MST-H-series sterilizers are available in three versions:

- Standard version: Loading height 350 mm with Belimed loading systems
- Hupfer version: Prepared for loading with Hupfer logistics system components
- Ground Loader (GR) version: Device can be loaded at ground level and placed in a shallow pit in the ground

| Model | Capacity | Chamber volume (Liters) | Options: Regional availability | | Loading height (mm) | Chamber dimensions H x W x D (mm) | System dimensions H x W x D (mm) |
|---|---|---|---|---|---|---|---|
| | StU* + ½ StU** | | 1 door | 2 doors | MST-H | | |
| MST-H | | | | | | | |
| MST-H 9-6-9* | 9 | 761 | – | Global excl. U.S. | 350 | 1,080 x 660 x 1,058 | 1,970 x 1,700 x 1,374 |
| MST-H 9-6-12* | 12 | 1,006 | only in the USA | worldwide | 350 | 1,080 x 660 x 1,398 | 1,970 x 1,700 x 1,714 (1,694)*** |
| MST-H 9-6-15* | 15 | 1,228 | only in the USA | worldwide | 350 | 1,080 x 660 x 1,706 | 1,970 x 1,700 x 2,022 (2,002)*** |
| MST-H 9-6-18* | 18 | 1,449 | only in the USA | worldwide | 350 | 1,080 x 660 x 2,014 | 1,970 x 1,700 x 2,330 (2,310)*** |
| MST-H GR | | | | | | | |
| MST-H GR 9-6-12** | 8 + 4 | 1,006 | only in the USA | worldwide | – | 1,080 x 660 x 1,398 | 1,970 x 1,765 x 1,714 (1,694)*** |
| MST-H GR 9-6-15** | 10 + 5 | 1,228 | only in the USA | worldwide | – | 1,080 x 660 x 1,706 | 1,970 x 1,765 x 2,022 (2,002)*** |
| MST-H GR 9-6-18** | 12 + 6 | 1,449 | only in the USA | worldwide | – | 1,080 x 660 x 2,014 | 1,970 x 1,765 x 2,330 (2,310)*** |

*StU = Sterile Unit = 300 x 300 x 600 mm ** 1/2 StU = Sterile Unit = 150 x 300 x 600 mm *** Depth of single door version

## Pit dimensions for Ground Loader (GR) version

| Basic model | Length (mm) | Width (mm) | Depth (mm) |
|---|---|---|---|
| MST-H Option GR 9-6-12 | 1,699 | 1,750 | 160 |
| MST-H Option GR 9-6-15 | 2,007 | | |
| MST-H Option GR 9-6-18 | 2,315 | | |

| Automated element for loading and unloading side | Length (mm) | Width (mm) | Depth (mm) |
|---|---|---|---|
| MST-H Option GR 9-6-12 | 830 | 750 | 160 |
| MST-H Option GR 9-6-15 | | | |
| MST-H Option GR 9-6-18 | | | |

The chamber of the steam sterilizer is developed and manufactured in Switzerland and comes with a 15-year warranty.

# Measurable quality and reliable processes

The chambers of Belimed sterilizers are manufactured exclusively in Switzerland and undergo stringent quality testing. They comply with all relevant standards and guidelines for pressure vessels, ensuring the highest levels of safety and quality.

### No compromises in materials and workmanship

The requirements of our customers and the applicable medical device guidelines serve as our benchmark for safety and quality. The materials and components from leading manufacturers, combined with state-of-the-art production technologies, comply with the highest quality standards and ensure a long service life for the installations.

### Safe, reliable and durable

MST-H sterilizers are designed for intensive use. The clever chamber design in combination with a stable door system ensures consistently high reliability and a long service life of the installations.

The high-quality stainless steel piping throughout the device is extremely durable, resistant and very mechanically stable. To underscore our quality standards, all of our chambers have a 15-year guarantee.

### Quality guarantees compliance with standards

Our sterilizers comply with all of the standards for medical devices. They comply with EN 285 and production takes place under the control of the EN ISO 13485 certified quality management system. This allows the operator to validate the sterilization process in accordance with EN ISO 17665-1.

# conomical use of resources, efficient operation

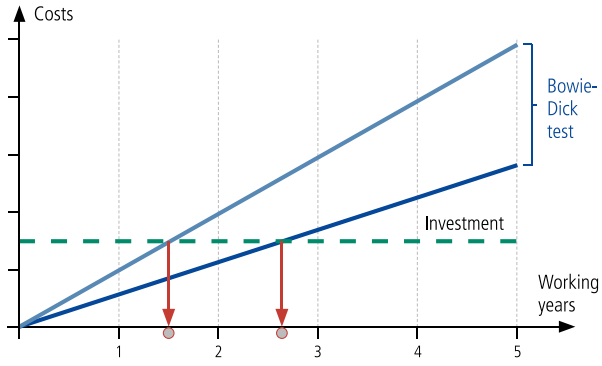
### Water-saving process technology

Thanks to Belimed process technology, the MST-H sterilizer achieves maximum efficiency. The innovative technology significantly reduces water consumption. Water consumption can be reduced by approximately a further 95% through optional connection to the building's cooling circuit. An additional reduction in consumption is achieved with the water-saving system of the integrated and extremely low-noise water-ring vacuum pump combined with the ejector installed as standard.

### Efficient and safe operation with integrated electronic Bowie-Dick test

Our optional electronic Bowie-Dick test system can be fully integrated into the sterilizer, eliminating the need for manual testing with external electronic systems or chemical indicators.

The test cycle can be started automatically and runs independently before the start of routine operation. This ensures reliable performance and saves valuable time in daily operations.




Return of Investment integrated Bowie-Dick test

### Durable door seal

The solid silicone door seal, guided within a precision-milled frame made of chrome-nickel steel, offers significantly longer service life compared to steam-pressurized sealing systems.

# Ease of operation and high quality of work

### Convenient and transparent user guidance

The clear menu navigation and illuminated 10" color display provide even more user comfort. Actuating the respective touch function keys – simple touching is sufficient – is confirmed by an acoustic signal.

### Hygienic design for perfect cleaning

The seamless stainless steel surface, combined with glass and high-quality HI-MACS® material, fulfills the highest hygiene requirements and facilitates efficient cleaning.

### Programs

The type-tested standard programs enable the sterilization of instruments, textiles, and porous goods. They are designed to ensure safe processing, short cycle times, and optimal drying with minimal energy and utility consumption.

### Process status visible from a distance

Key information such as remaining cycle time, loading or unloading readiness, and warning messages is clearly shown on the patented process status display.

### Time savings through automatic start and shutdown

With the automatic start function, the sterilizer heats up and performs the daily test routine before regular operation begins. This reduces staff workload and increases the overall throughput of sterile goods.

Automatic shutdown at the end of the shift saves valuable energy and can be performed fully automatically.

In combination with automatic unloading, the final cycle can be completed without operator supervision.

The automatic function can be flexibly adapted to the customer needs and perfectly integrated into the CSSD workflow.

# Transport System

The loading and unloading system ensures fast, safe, and efficient transport of sterilizable goods and enables a smooth and optimized workflow.

### Loading
The automatic loading process starts automatically from the queue line or transport cart, requiring no operator supervision.

### Unloading
Once the sterilization cycle is complete, unloading begins automatically, again without any manual intervention.

Since neither loading nor unloading requires supervision, staff can focus on other tasks, increasing efficiency within the CSSD. In combination with the automatic shutdown function, the unloading automation also enables fully autonomous operation of the final cycle.

### Robust and reliable design
The transport system has been engineered with a strong focus on durability to ensure fast and reliable loading and unloading of the sterilizer.

Its intelligent drive system enables smooth acceleration, high loading speed, and gentle stopping for safe and precise operation.

### Modular Design
The transport system features a modular design that can be configured and adapted to individual needs.

### Configurations
The following configurations are available:
1. Automatic loading
2. Automatic loading with queue line
3. Automatic unloading
4. Automatic unloading with queue line
5. Automatic loading and unloading
6. Automatic loading and unloading with queue line

### Compatibility with the Hupfer KÄNGURUH-SYSTEM®
By connecting the sterilizer to the Hupfer KÄNGURUH-SYSTEM®, the Hupfer logistics system can be used seamlessly both inside and outside the CSSD without the need to manually transfer loads to different carts.

This option is available for MST-H chamber sizes of 9, 12, and 18 StU, in combination with Hupfer loading frames for 6 or 9 StU.

### System overview
1. Automatic loading/ unloading unit
2. Queue line
3. Batch cart
4. Transport cart


MST-H 9-6-9 with TS MST

## Components

### Automatic loading/unloading unit

The automatic loading/unloading unit is used to automatically load and unload the chamber directly from the transport cart.

### Queue line

The queue line provides an additional parking position for a batch cart, allowing the transport cart to be uncoupled during the loading and unloading process and used for other purposes.

### Transport cart

The transport cart is used to move the batch cart and can be connected to the sterilizer, the automatic loading/unloading unit, or the queue line. The large wheels ensure an easy maneuvering, even when fully loaded. The large, ergonomically accessible locking lever allows a convenient docking and securing of the transport cart.

### Batch cart

The batch cart is designed for loading the sterilizer with items to be sterilized. The shelves can be easily adjusted in height without tools, and additional shelves can be added or removed as required.

### Dimensions TS MST for MST-H 10.02

| Description | Dimensions (mm) | | | | | Loading height (mm) |
|---|---|---|---|---|---|---|
| | H x W | Model 9-6-6 D | Model 9-6-9 D | Model 9-6-12 D | Model 9-6-15 D | |
| Loading/unloading unit | 389 x 638 | 989 | 1,239 | 1,614 | 1,934 | 350 |
| Queue line | 389 x 638 | 848 | 1,148 | 1,523 | 1,843 | 350 |
| Transport cart | 1,005 x 637 | 890 | 1,190 | 1,565 | 1,885 | 350 |
| Batch cart | 913 x 600 | 655 | 955 | 1,330 | 1,650 | – |

### Dimensions TS 16 for MST-H GR

| Description | Dimensions (mm) | | | | Loading height (mm) |
|---|---|---|---|---|---|
| | H x W | Model 9-6-9 D | Model 9-6-12 D | Model 9-6-15 D | |
| Loading/unloading unit | 112 x 410 | 1,065 | | | 0 |
| Batch cart | 1,005 x 600 | 970 | 1,345 | 1,665 | 160 |

# Steam supply

Integrated steam generator

External steam generator

### Highest clean steam quality with integrated degassing

Equipped with a standard integrated feed water tank that removes non-condensable gases, Belimed steam generators guarantee the highest clean steam quality, ensuring safe and efficient sterilization.

### Flexible clean steam supply for efficient sterilization

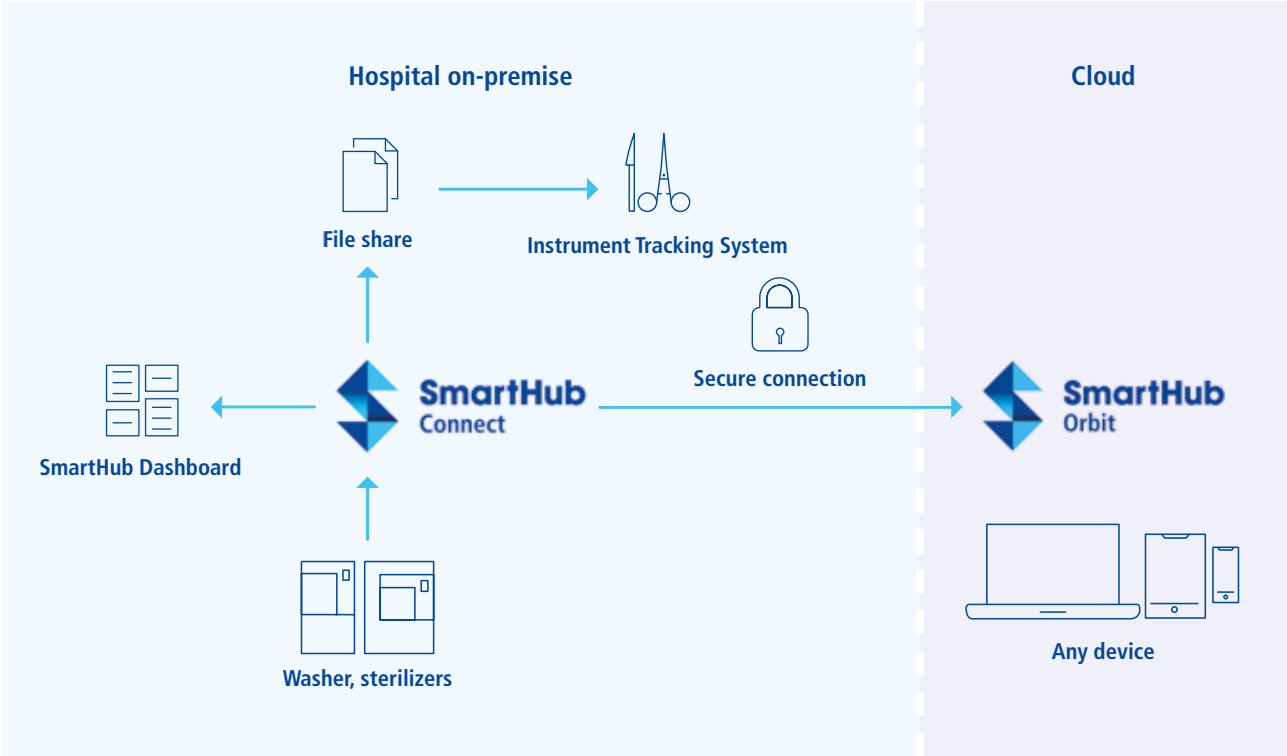
To optimally meet the different needs in the CSSD, the following clean steam supply options are available:

- Electrically heated steam generator – available as an internal or external version
- Steam-heated steam generator – available as an internal or external version
- Connection to an external clean steam supply

### Steam switchover for maximum availability

This allows the system to switch seamlessly to the built-in steam generator whenever maintenance is required or the external clean steam supply is unavailable, ensuring uninterrupted operation.

| Model | Power (kW) | Sterilizer | Internal Version | External Version |
|---|---|---|---|---|
| Electrically heated steam generator \| ELD 30 | 30 | – | | |
| Electrically heated steam generator \| ELD 45 | 45 | MST-H 9-6-9 | ✓ | |
| Electrically heated steam generator \| ELD 60 | 60 | MST-H 9-6-12 | ✓ | |
| Electrically heated steam generator \| ELD 90 | 90 | MST-H 9-6-15<br>MST-H 9-6-18 | ✓ | |
| Electrically heated steam generator \| WTD 30 | 30 | – | | ✓ |
| Steam-heated steam generator \| WTD 45 | 45 | MST-H 9-6-9 | ✓ | |
| Steam-heated steam generator \| WTD 60 | 60 | MST-H 9-6-12 | ✓ | |
| Steam-heated steam generator \| WTD 90 | 90 | MST-H 9-6-15<br>MST-H 9-6-18 | ✓ | |




# Transparency and comprehensive documentation

### SmartHub for a fully digital CSSD

SmartHub from Belimed is our overall approach for a completely digital CSSD. All relevant process and device data from the connected Belimed devices are recorded in real time, stored in SmartHub and published in the form of a structured and clearly displayed batch report. The required data is also made available to the connected instrument management system. All device data is converted into information and valuable insights in the SmartHub Orbit web application. This gives CSSD managers full control and simplifies workflow.

### Quick and easy: batch documentation with integrated printer

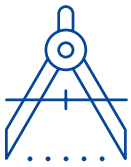
The standard integrated printer can also be used to create batch documentation for the connected devices, which means that the basic requirements of the operator's documentation obligation are met.

### Compatible with any instrument tracking system (ITS)

SmartHub enables the connection with the higher-level instrument tracking system. The batch data stored in the SmartHub is transferred via suitable interfaces and further processed there for this purpose. It is compatible with the most common sterile good and instrument management systems.

# Belimed supplies systematic solutions

The MST-H steam sterilizer is the key device for efficient reprocessing workflows in your CSSD. At Belimed, as Engineers of Confidence, we go further by providing fully integrated services in planning, technology and support.



### Belimed Blueprint

The planning and design team develops tailor-made solutions for various needs, goals and space requirements – from analysis to installation.

### Belimed Connect

Our networking options guarantee complete documentation of mechanical cleaning, disinfection and sterilization.

### Belimed Prevent™

With our service packages, we offer preventive maintenance and provide you with comprehensive support. Our focus is on ensuring your success.

### Belimed Academy

We are happy to share our extensive expertise through dedicated training programs for our customers and partners.

### Matching auxiliaries

With optional equipment for enhancing the standard devices and our extensive range of auxiliaries, we offer a high level of flexibility when it comes to implementing your projects.

### Complete solutions

As a provider of complete solutions for CSSDs, Belimed also supplies high-quality auxiliaries in addition to cleaning and sterilization devices. These range from work tables for pre-cleaning and preparation to fully equipped packaging areas and sterile goods storage systems.

# Overview of the MST-H

The MST-H range of steam sterilizers allows maximum throughput to the load to be sterilized thanks to their large capacity.

## High flexibility and maximum throughput

- Capacity of 9 to 18 StU
- Standard preset sterilization and test programs, as well as other customizable programs
- Optimal adaptation to customer needs due to a wide variety of options

## Simple, time-saving handling

- Convenient, simple operation
- Automatic start function allows test programs to be run through before work is started
- Integrated electronic Bowie-Dick test reduces personnel, time and documentation complexity, as well as consumables
- Patented LED process status display provides an overview of the current process status at all times
- Efficient maintenance due to the large service area

## Economical use of resources

- Water-saving system integrated as standard for the water-ring vacuum pump ensures low fresh water consumption
- Water consumption can be reduced by 95% through optional connection to the building's cooling circuit

## Fully flexible equipment

- Integrated steam generator (electrically or steam-heated)
- Externally installed vacuum pump system
- Optimized loading and unloading with the Ground Loader (GR) version
- Increased capacity with automated loading and unloading systems
- Compatible with Hupfer KÄNGURUH-SYSTEM®
- One- and two-door batch cart return elements, optionally with queuing section
- Ergonomic transfer carts

## Seamless connectivity

- Complete documentation of process data
- Digitally networkable via SmartHub
- Connection to dashboards for a clear display of current process steps on external monitors

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5320.711.016_2025.11 Subject to change


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