



WD 290

Shorter cycle times and greater
cleaning performance

Belimed
Infection Control

WD 290 – 18 DIN tray washer-disinfector with automatic sliding doors

With the largest capacity in the series, the WD 290 is the highest performing machine to fully utilize its capabilities. The complete process, including loading and unloading, can be automated to enhance the machine's throughput capacity.

Highest capacity and cost efficiency

The WD 290 is fully compatible with the Belimed WD 390 multi-chamber washer-disinfector. This combination results in an overall system within a minimal space requirement, providing a combined operation that achieves a real cost saving in space. Racks and transport carts for the WD 290 are also interchangeable with the WD 290 IQ and the WD 390 multi-chamber washer-disinfector.

Operating location

The WD 290 is suitable in any Sterile Services Department wherever there is demand for medium to high throughput of medical equipment. Because of the machine's capacity, the WD 290 is the choice for the medium to large CSSD operations without the need for automation*.

Dimensions	WD 290
Outer dimensions H x W x D (mm)	1,840 x 900 x 940
Chamber dimensions H x W x D (mm)	690 x 630 x 800
Chamber volume net/gross (l)	350/430
Capacity	
Surgical instruments (DIN trays)	18
MIS instruments (pieces)	150
Anesthesia material (sets)	7
Sterile goods containers including lid and filter lid (pieces)	5
including lid, without filter lid (pieces)	6
OR shoes (pieces)	60
Baby bottles including caps (pieces)	126

*when automation is required, we offer the advanced Belimed's WD 290 IQ.



Schulthess Klinik, Zurich/Switzerland, Swiss Olympic Medical Center



Belimed enhances CSSD performance

Central Sterile Supplies Departments (CSSD) are an integral department in most clinic and hospital operations. The demands placed on instrument re-processing within these units have never been more stringent than now. With a vast diversity of material and equipment to be cleaned, disinfected and dried, this volume is increasing all the time.

With current trends in merging clinics and hospitals into larger sterile service facilities, plus the additional legislation and standards that have become more rigorous in monitoring operational and patient safety procedures, Belimed as a leading manufacturer of decontamination equipment has brought together its knowledge and expertise in this area to provide a range of washer-disinfectors to meet these new demands.

Innovation and experience

As a leading supplier of decontamination systems and solutions in the area of infection control, Belimed has over 50 years of experience developing and manufacturing innovative disinfection and sterilization products for the healthcare, pharmaceutical and laboratory sectors.

Numerous requirements – one contact

Belimed offers everything a CSSD requires for cleaning, disinfection and sterilization. In addition to being a high-quality decontamination systems provider, Belimed also supplies a broad range of additional solutions. This includes an in-house service, extending from planning project management through to after-sales support with validation and maintenance. Belimed works together with its clients to develop solutions that provide a system for efficient workflows and maximum productivity.

Technical expertise

Performance, quality, economy and consistency are the main features of WD 290 washer-disinfector by Belimed. Developed to comply with the latest EN ISO 15883-1 and -2 directive, it ensures safe cleaning, disinfection and drying of medical devices.

Exceptional quality with short cycle times

Belimed washer-disinfectors ensure a high throughput in instrument re-processing; even the shortest program times achieve exceptional cleaning results. Factors that make this possible include specifically designed process parameters to meet the precise load to be cleaned and disinfected. With Belimed's unique drying system combined with DI-water pre-heating tanks, cycle times can be shortened to allow users a greater operational performance.

Space saving

With a width of only 90 cm and a maximum height of 184 cm, this product achieves one of the smallest footprints of any unit on the market.

Low media consumption and high productivity

Dynamic Filling is a unique economic feature. Water volume is automatically matched to the load carrier and the material to be processed. This optimizes utilization of water, detergents and energy, resulting in savings of up to 20% in utility and additive consumption per cycle.

Energy saving by heat recovery

As an optional feature, heat recovery from the exhaust air can be used to reduce energy and media consumption by an additional 20%.



Belimed washer-disinfectors ensure a perfect cleaning result due to their high washing performance and innovative wash arm design.

Safety and well-being in the CSSD – Belimed's smart product design

The smart Belimed washer-disinfectors are developed in accordance with the latest guidelines. They provide a high degree of user friendliness, safety and cost efficiency in addition to an attractive design and clear forms.

Today's CSSD

Belimed's washer-disinfectors are fully oriented to the requirements of CSSD employees. The modern, light product design provides greater safety and well-being at the workplace. This is highlighted, for example, by the flush operating interface that combines green glass windows with stainless steel and white HI-MACS® material. There are no protruding elements, grooves or corners. The smooth surface is easy to clean, making it especially hygienic. Even the operating panel is located behind a glass plate.

Correct and fast information

Important process data, such as remaining duration, loading or removal readiness or error messages, are displayed on our systems via the patented process status display. The employee can see the relevant information clearly at a glance, even from a distance. The display shows a LED analogue clock.

High quality

Our customers' requirements as well as current guidelines are our benchmark for safety, quality, efficiency and ecology. This is once again highlighted by the new product generation. Exclusive use of high-quality materials combined with careful workmanship make our products durable and robust. The best proof of this is the scratch-resistant and extremely tough glass front of our machines. The devices comply with all relevant international and country-specific directives, such as the most important standards, EN ISO 15883-1 and -2.

Maximum user convenience

The smart process status indicator displays remaining cycle time, readiness for (un)loading and error messages on an LED display, integrated into the HI-MACS® panel. The LED process status display is visible from distance, allowing CSSD staff to go about their tasks uninterrupted and attend to the washer-disinfector only when prompted by the process status indicator.



Important process data such as the remaining cycle time, loading or removal readiness and error indication are displayed via our patented status display that is easily visible from a distance.

Improved work quality – the focus is on the human being

CSSDs manage high workloads with few staff. Belimed systems help the staff and relieve the workload by focusing on ease of operation and maximum process reliability.

Consistent and ergonomic operation

Whether for washer-disinfectors or sterilizers, the new generation of Belimed systems offers a uniform operating interface, thus reducing training requirements and error sources to a minimum. The "CP-TOP" operating panel is located at an ergonomically optimal height in all machines.

Automatic program selection and efficient re-processing

Another advantage is the automatic program selection option. This allows programs to be automatically or manually selected. The control identifies the relevant rack using special sensors and automatically begins the cleaning process based on rack identification.

Comfortable and transparent user guidance

Clear menu navigation and the illuminated color display ensure even greater user comfort. Activation of the respective keys with a simple touch is confirmed by an acoustic signal.



Uniform CP-TOP operating panel, behind glass, with function buttons in touch screen technology

More than just cycle documentation



Hospitals are required to document re-processing data. SmartHub is our software solution that ensures and simplifies traceability of medical devices during each step of the complete decontamination circle. But that is just the beginning ...

Belimed's washer-disinfectors and sterilizers produce up to two million data points per cycle, including program selection, chemical dosing quantities, temperature, water volumes, operating times and water conductivity. SmartHub is a software solution which ensures that all relevant machine data is captured in real time from any Belimed machine to be further processed.

SmartHub provides a dashboard that shows insights into the machine cycle stages, thus keeping everyone working in the CSSD informed at all times. It also has the ability to collect and display batch information and allows for smooth integration to any Instrument Tracking System.

SmartHub can be run on-premise but unfolds its full potential as a web application – SmartHub Orbit. This is where all machine data is turned into insights – and value. All relevant machine data and cycle statuses can be accessed from anywhere, at any time. This gives CSSD managers full control and will transform the way they work.

SmartHub is more than just a connection – it will pave your way to a fully digital CSSD.



Integrated printer

Without the need for additional software, an integral printer can be fitted to either the loading or unloading side, allowing program data to be printed directly onto a paper strip.

Shorter cycle times, immaculate cleaning

If this is desired, extremely short cycle times of only 31 minutes including drying can be achieved under optimal conditions. Evidence for effective, standard-compliant cleaning has been provided by an independent accredited test laboratory.

A₀ value

Belimed's programmable microprocessor control provides the A₀ value during each cycle. The disinfection phase is only completed when the appropriate A₀ value is reached. This prevents unnecessary resource consumption and saves time. The A₀ value is a measure of the effectiveness of thermal disinfection as a function of temperature and time. Mathematically, this is described with the integral of temperature over time. The standard states variable A₀ in seconds.

Fast and reliable data acquisition

Belimed provides tracking of processed items by using either hand-held or attached bar code scanners to their washer-disinfectors. Barcodes on instrument trays can be scanned before and after the process to identify its assigned program and batch number, providing documentation of the goods cleaning and disinfection process.

Greater safety and reliability due to independent process data monitoring

Monitoring sensors ensure maximum process reliability. Relevant performance parameters are monitored continuously:

- Number and type of process step
- Pump pressures
- Temperature-time profiles of water and air
- Quantity and volume of detergents used
- Conductivity of the final rinse water

If any variations of the preset cleaning and disinfection parameters are not met, the machine will give an audible alarm, alerting the operator to an aborted cycle. Belimed's open architecture monitoring allows easy interfacing with electronic track and traceability systems.



Integrated printer in the front panel



The Belimed barcode scanner allows fast detection of instrument trays



Efficient and economical operation

The Belimed commitment to high economic efficiency includes a focus on cost savings and maximizing the investment in your equipment. Our systems feature economical use of resources of water, detergents and energy.

Dynamic Filling:

Saves up to 20% of resources per cycle

Belimed's Dynamic Filling contributes to high economic efficiency and environmental protection in either a clinic or hospital operation. The washer-disinfector's water intake is monitored to the actual rack that is to be processed; therefore water consumption is reduced automatically. This also cuts the demand for energy and detergents accordingly.



20%
energy savings

High-performance drying: effective, yet gentle

Two powerful turbines are used in the high-volume Belimed dryers. Although the drying achieves an unrivalled performance in efficiency and time, operating noise levels are kept to a low level. The large air volume and dual circulation dries even the critical inner lumens of cannula instruments within a very short time. The air used for drying is provided by an upstream HEPA filter. Fast yet gentle drying maintains the long-term working condition of high-value medical instruments.



20%
water savings

DI-water pre-heating:

25% increase in productivity

When the program phase of thermal disinfection begins, the required DI-water is already provided at the required thermal disinfection temperature. This is achieved by preheating this medium in a separate tank. This option reduces the overall cycle time, providing an increase in productivity of up to 25%. This addition complies with EN ISO 15883-1 and -2: the tank is positioned above the wash chamber to ensure no pipework dead legs and complete draining of the tank between each intake.

Exhaust air condenser:

hygiene in exhaust air cooling

The problem of exhaust air cooling has been solved with a unique counter-flow heat exchanger. This technology avoids condensation in the exhaust air pipe and protects against microbial contamination and corrosion.

Exhaust air heat recovery:

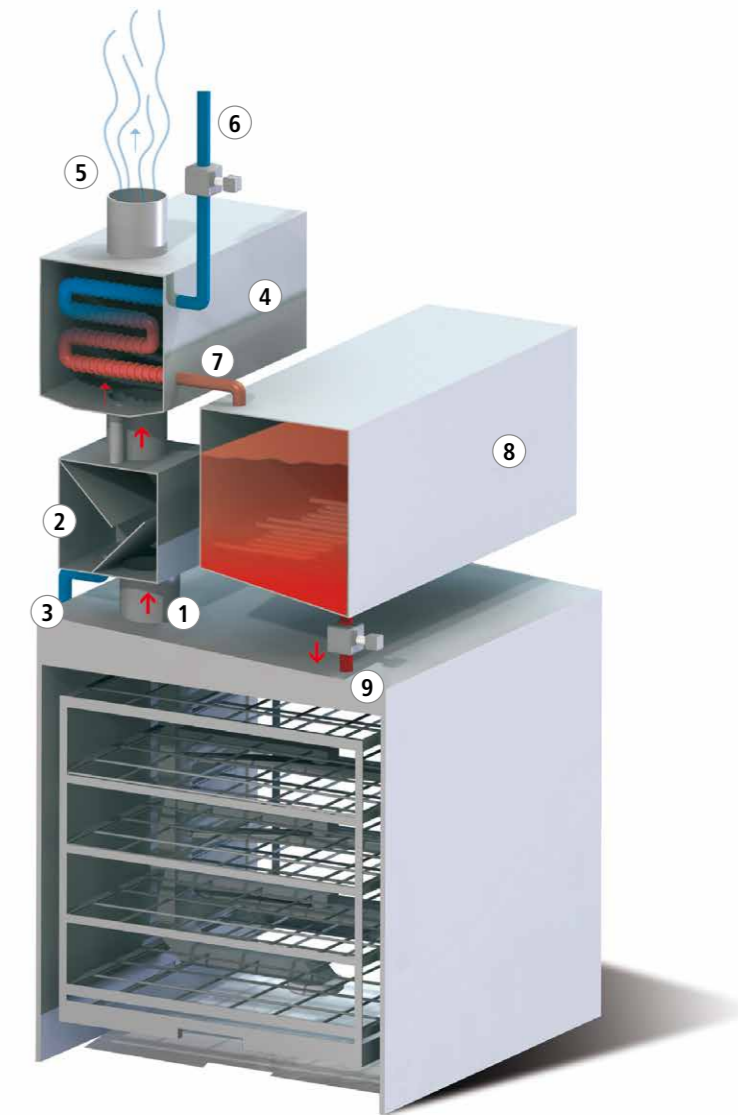
20% reduction in energy consumption

The principle of DI-water preheating and vapor condensation may be taken one step further. The DI-water is heated via the machine's exhaust to reduce the energy consumption. The incoming DI-water also cools the exhaust air at the same time, saving up to 40 liters of cooling water per cycle. The DI-water heated via the vapor condenser is supplied to the DI-water preheating tank and used for the machine's thermal disinfection phase. Exhaust air heat recovery reduces energy consumption by up to 20%. The financial savings achieved by this option means that investment costs are recouped within a very short period of time.

Exhaust air flap with condensate drain:

shorter cycle times and less energy

Belimed systems provide an effective solution to capture heat resulting from high washing temperatures. The washer-disinfectors feature a dynamic exhaust air flap that opens only in the event of excess pressure in the chamber. This means that the heating energy for washing is not tapped from the exhaust air. The CSSD benefits from real energy savings and shorter cycle times. Another feature, the condensate drain, reliably prevents condensate backflow into the machine, routing condensate from the exhaust air pipe directly into the drain instead.



- | | |
|---------------------------------------|---------------------------------------|
| 1 Exhaust air hot | 6 DI-water cold |
| 2 Exhaust air flap | 7 DI-water preheated |
| 3 Condensate drain | 8 DI-water tank with heating elements |
| 4 Condenser with heat recovery system | 9 DI-water hot |
| 5 Exhaust air cold | |

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Belimed
Infection Control

Engineers of Confidence.