

Shorter cycle times and greater
cleaning performance



WD 290

Cabinet washer-disinfectors in compliance with EN ISO 15883

Technical expertise

Performance, quality, economy and consistency are the main features of Belimed's WD 290. Developed to comply with the latest EN ISO 15883 directive, they ensure safe cleaning, disinfection and drying of lab devices.

Exceptional quality with short cycle times

Belimed Life Science washer-disinfectors ensure a high throughput in instrument reprocessing, 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 Life Sciences's unique drying system combined with RO water pre-heat 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, the Belimed Life Science washer-disinfector 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 utilisation 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 Life Science washer-disinfectors ensure a perfect cleaning result due to its high washing performance and its innovative wash arm design.



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

Reliable product design successfully implemented: 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.

Increased capacity and cost efficiency

The WD 290 is fully compatible with the Belimed WD 350 Dual-Washer and the 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 350 Dual-Washer and the WD 390 multi-chamber washer-disinfector.

Operating location

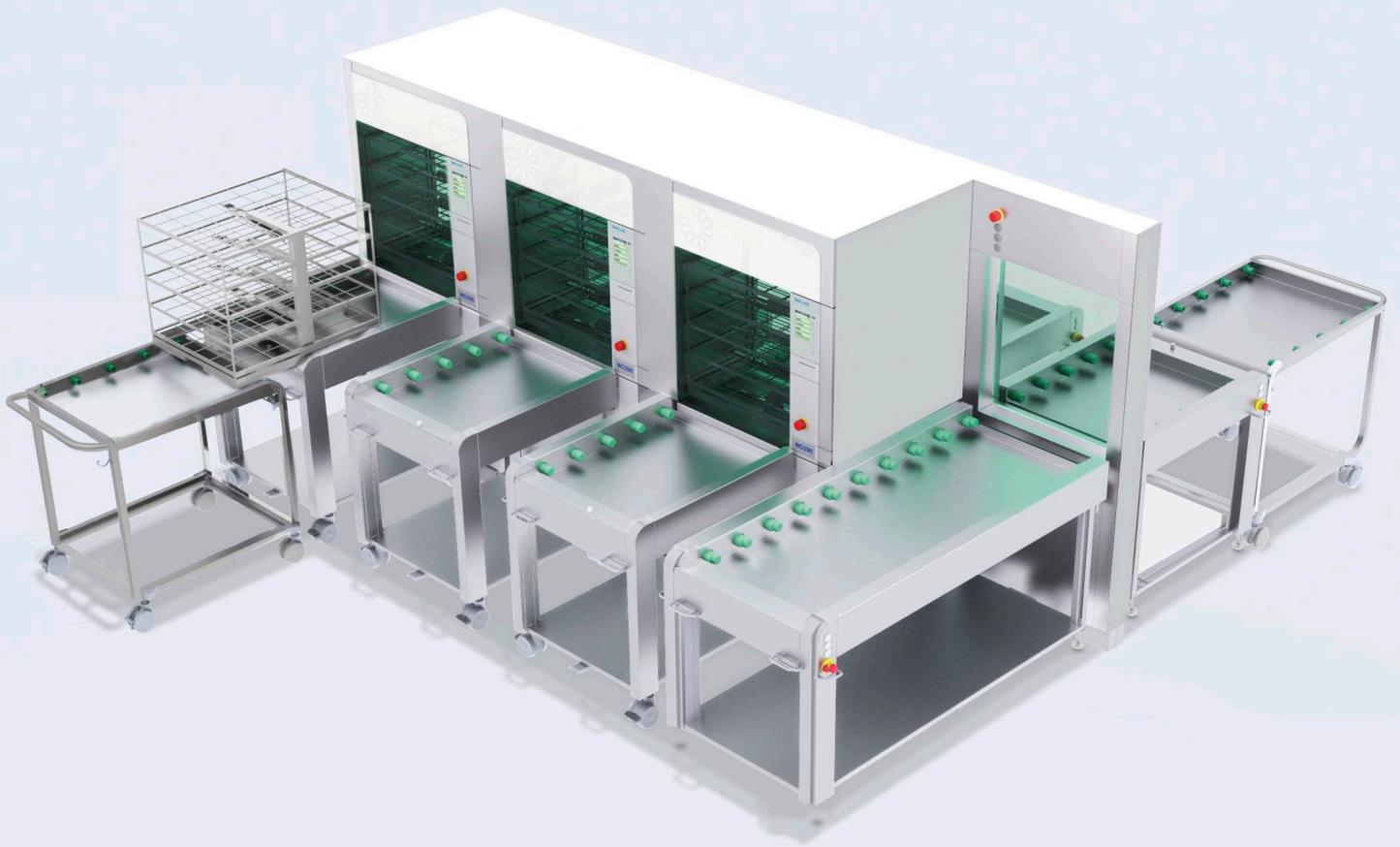
The WD 290 is suitable in any Sterile Services Department wherever there is demand for high throughput of equipment. Because of the machine's capacity and automation options offered, the WD 290 is the choice for the larger CSSD operations.



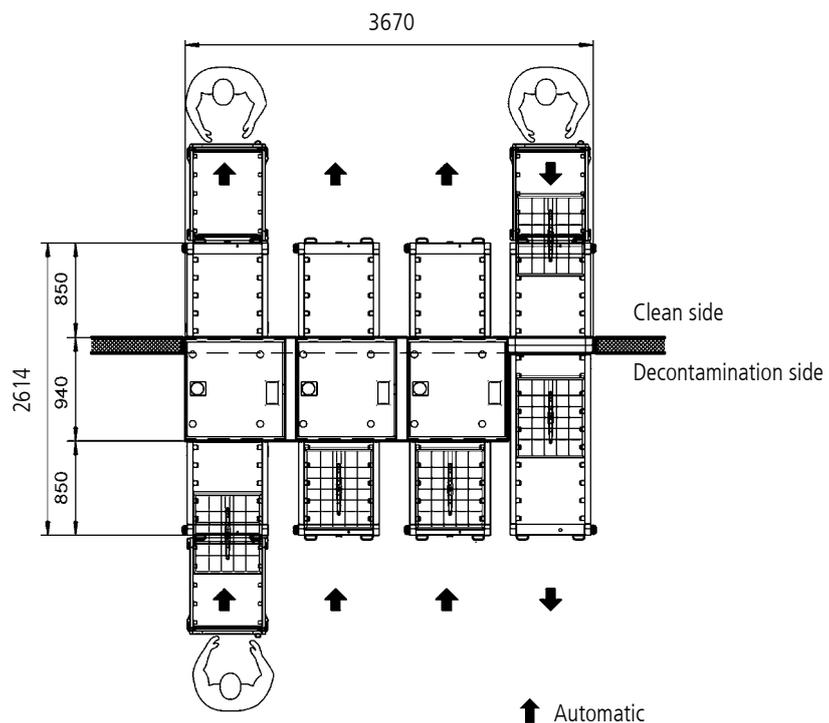
Technical data, WD 290

Dimensions	
Outer dimensions H x W x D (mm)	1840 x 900 x 940
Chamber dimensions H x W x D (mm)	690 x 630 x 800
Chamber volume (l)	350
Cycle capacity	
Surgical instruments (DIN trays)	18
MIC instruments (pieces)	150
Anaesthesia 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

See page 19 for further technical data



Automation helps to streamline decontamination process and increase productivity. Operating staff are able to prepare several racks at once and time is saved as loading and unloading of the machines is carried out automatically without operator involvement.





The WA 290 is an innovative development of Belimed Life Science automatic systems. The rotary modules link to form an entirely automated circuit no longer requiring the operating staff to manually lift or re-site the racks. This is due to the Belimed Life Science intelligent transports system that allows the racks to go directly into the next available washer-disinfector. Especially useful when goods have to be fast tracked ensuring minimal wait time, guaranteeing a continuous workflow.

Hygiene and Cost-Effectiveness: Your Requirement – Our Core Competence

Implement appropriate technical support to respond to rising standards for the reprocessing lab devices. With our new fully automatic WA 290 shuttle system, the WD 290 washer-disinfectors can be loaded and unloaded even more professionally.

Expertise in technology and automation

Modern technology and process optimization are tried and tested ways to manage these challenges. As one of the leading suppliers of life science system solutions, we reduce both approaches to one common denominator. With the WD 290, we thus offer you one efficient device for cleaning, disinfection and drying. To make the reprocessing procedure even more efficient, we have specifically expanded the device with the new WA 290 shuttle system that makes fully automatic loading and unloading of the WD 290 possible.

Technology and quality combined with added value for people and businesses

The WA 290 shuttle system improves corresponding procedures so much that it effectively relieves the load on employees. At the same time, throughput times are reduced, as are processing times and costs. The system is most ideally suited to the high load in everyday practice. The system's quality, reliability and stability have been thoroughly tested. To support this continuing development, we designed the WA290 according our highest quality standards.

Automated processes improve work efficiency

Automation for the WD 290 provides flexibility in both loading and unloading or just one of the two functions. In addition, there are further automated options such as return conveyors and transfer windows.

Automation provides greater efficiency

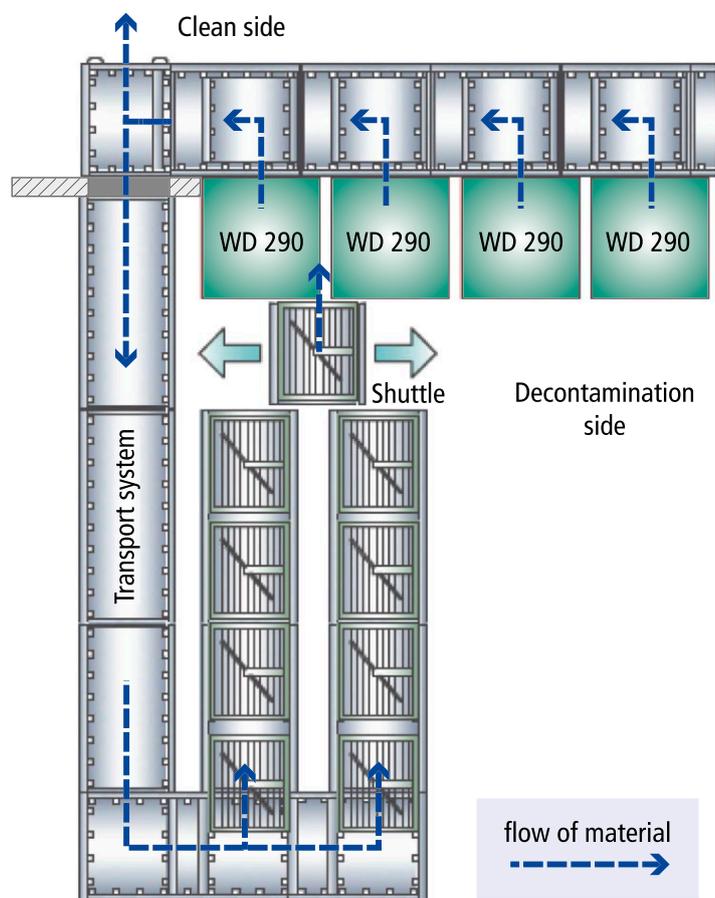
The fundamental requirement for any return on investment is to maximise the washer-disinfector's throughput capabilities. With automation, several racks may be positioned on a loading conveyor. The rack is automatically transported into the WD 290 and at the same time the racks coding selects the cycle appropriate to the load to be processed. Once the cycle has been completed and verified, the rack will be automatically delivered on to the unloading conveyor. At peak flow times, the washer-disinfector is constantly in use, avoiding any downtimes. An automated process allows operating staff to focus their efforts in areas other than loading and unloading. In addition, it gains valuable operating time as the WD 290 can independently handle several cycles at the end of the working day without personnel involvement.

Flexibility

The fully automatic WA290 design is based on the latest hygienic recommendations, whereat the focus of the system is always absolutely flexibility. Although the WA290 is a closed system, the user may manually interrupt the process to load an express charge, anytime. With the add-on solution the system can be upgrade during his own lifetime in case of rising demand of reprocess goods. Concluding offers the option "Direct Dock" a solution for constricted rooms.

Cleaning and maintenance made easy

Belimed Life Science's transport system is designed to meet hygiene requirements and may be cleaned quickly and easily at all times. Also the usability for the user and the easiness of maintenance is outstanding.



Cycle documentation

Laboratories are required to document re-processing data. The Belimed Life Science Control Software is an IT solution for ensuring traceability of lab-devices during each step of the complete decontamination circle.

Integrated printer

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

Belimed Life Science Software ICS 8535

All process information, the measured values and program parameters are automatically downloaded to either a stand alone PC or to a clients network. The data may be retrieved at any time and used to provide documentation for quality assurance or product release purposes.

Our Life Science Software ICS 8535 can also provide, via data loggers independent of the machine's control, the key parameters that impact on the cleaning and disinfection efficacy.

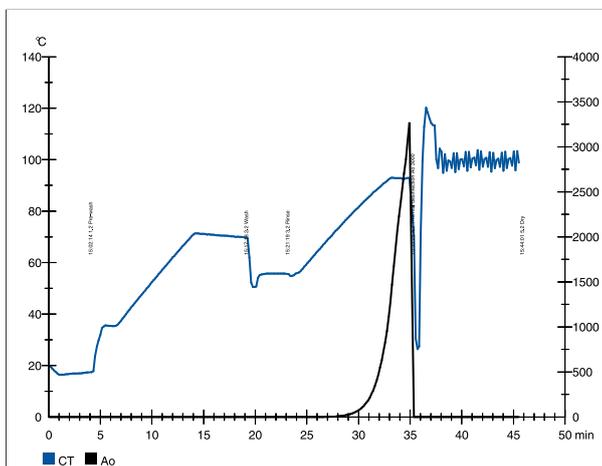
Full data traceability

At any time Belimed Life Science's Software ICS 8535 may be extended for use with other decontamination equipment such as cart washers or sterilisers. Due to using an SQL platform, the ICS 8535 allows either machine's process data or independent monitoring data to be easily exported, to ensure full integration and connectivity with any client's electronic tracking and traceability system.

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.

Cycle documentation		24.10.2007 06:53:46	
User	: Hospital & Medical Center	Manufacturer	: Belimed
Machine Type	: WD290	User	:
Machine No.	: 1	Cycle counter	: 1033
Cycle name	: Instruments	Cycle start	: 22.10.2007 14:58:14
Prog. No. / Version	: 1 / 22.10.2007	Cycle time [Min:Sec]	: 46:28
Software index	: V1.05A	Desinfection period [Min:Sec]	: 1:39
No. of carrier for mat.	:	Designation of carrier for mat.	:
Result	: Cycle passed		



Signature

Enable: yes [] / no []

Clearly structured cycle documentation

The Belimed Life Science barcode scanner allows fast detection of instrument trays



A₀ value

Belimed Life Science'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 Life Science 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 front panel

Efficient and economical operation

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

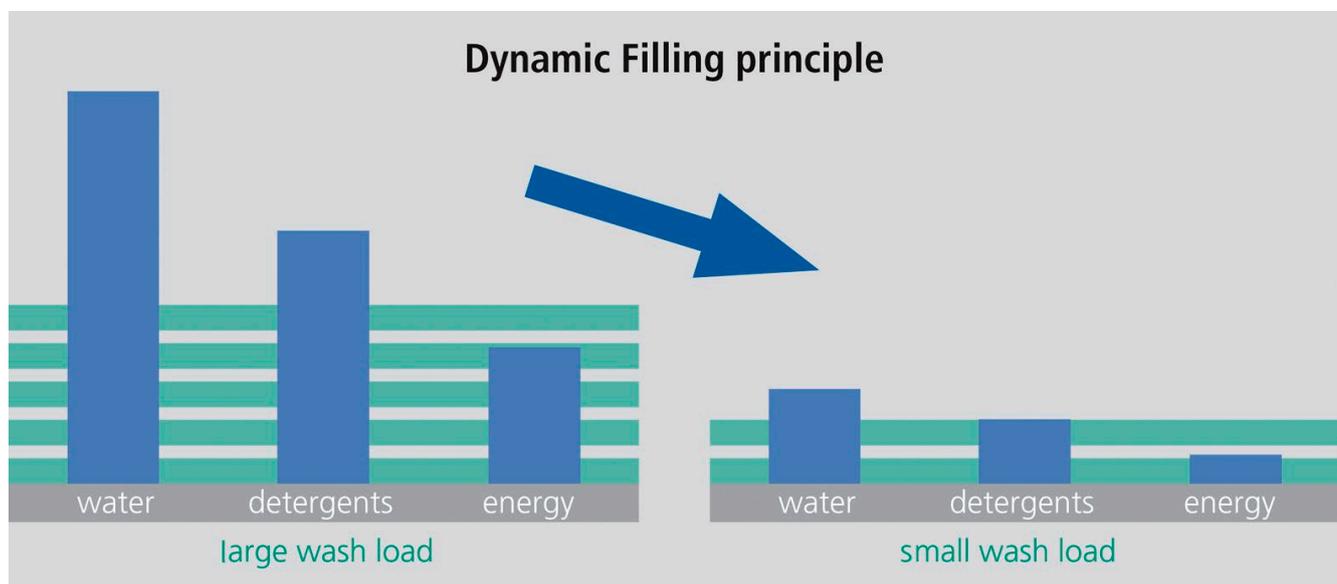
Dynamic Filling:

Saves up to 20% of resources per cycle

Belimed Life Science'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.

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 long term working condition of high-value instruments.



RO water pre-heating:

25 % increase in productivity

When the program phase of thermal disinfection begins, the required RO 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: 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:

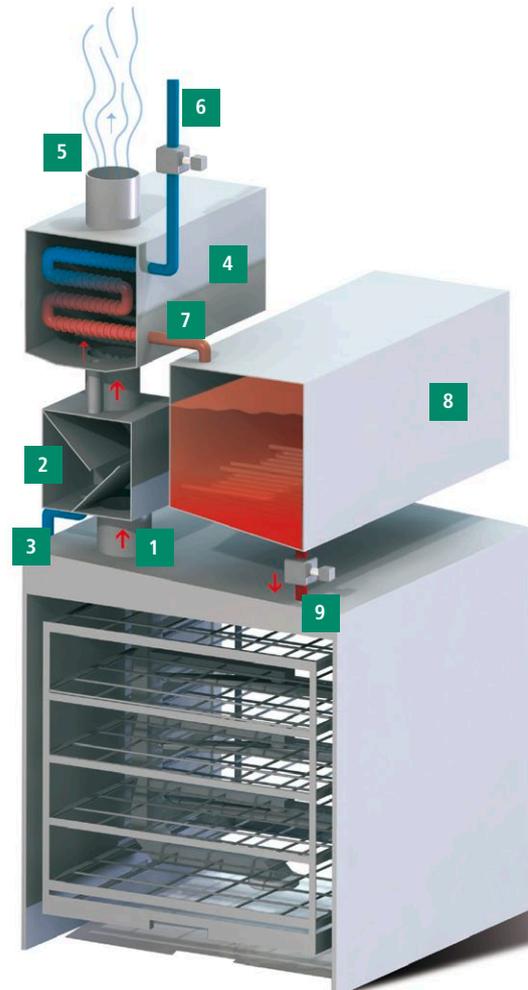
20 % reduction in energy consumption

The principle of RO water preheating and vapour condensation may be taken one step further. The RO water is heated via the machine's exhaust to reduce the energy consumption. The incoming RO water also cools the exhaust air at the same time, saving up to 40 liters of cooling water per cycle. The RO water heated via the vapour condenser is supplied to the RO 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 Life Science 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. Our customers benefit 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
- 2 Exhaust air flap
- 3 Condensate drain
- 4 Condenser with heat recovery system
- 5 Exhaust air cold
- 6 RO water cold
- 7 RO water preheated
- 8 RO water tank with heating elements
- 9 RO water hot



Innovative function

When developing the WD 290, Belimed Life Science's focus was also on the protection of both equipment and staff. Every detail in the machine's design provides the user with a safe and reliable operation.

Load protection: effective prevention of heat damage

A specific sensor in the wash chamber prevents instrument damage due to overheating. The defined temperatures of the selected programs are constantly measured and compared throughout the process. If a deviation occurs, the system responds immediately by switching off the heater, pump, and dryer to protect the wash load.

Docking coupler: high cleaning action

The machine and rack connect to form one whole system. A hydraulically activated docking device connects the washer and rack providing a water tight seal resulting in an improved cleaning action in comparison to many other conventional docking systems.

Self-cleaning: thorough disinfection of the entire system

To meet hygiene standards, the entire system including wash chamber and RO water preheating system, is cleaned and disinfected automatically during the defined site operational procedure downtimes. Therefore, the washer-disinfector is always in a hygienic condition for operation at all times.

Complete drainage: automatically and reliably after each program phase

The design and construction of Belimed chambers and its associated pipework eliminates the risk of carry-over between each phase of the cycle. The entire system is drained completely after each process step.

Foam monitoring: quality assurance and relieving staff workload

Contamination on the instrument or lab device from pre-treatment such as manual disinfection may lead to foaming during re-processing and impair the cleaning quality. Belimed Life Science systems automatically monitor pre-rinsing so that excessive foaming is detected and the corresponding rinse operation is automatically repeated. Monitoring relieves the staff of checking this manually and ensures that the required cleaning process is achieved.

Electrical/steam heating: selectable for stable productivity

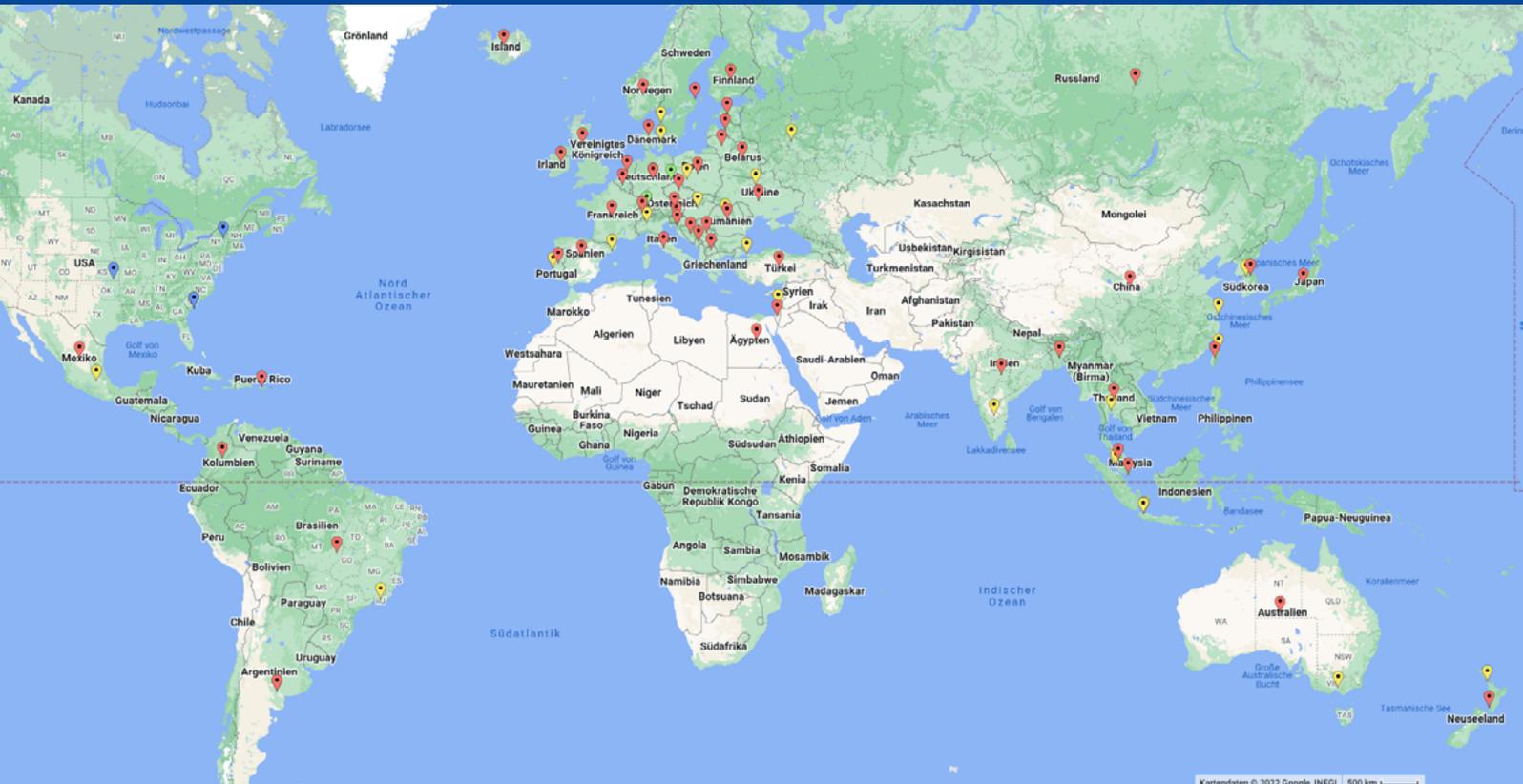
The washer-disinfectors may be equipped with two heating systems, steam and electrical, for optimal reliability. Manual or automatic switching between both systems may be performed at any time. This provides backup to minimise any bottlenecks should the steam supply go down.

Process monitoring: active, integral system monitoring

Belimed Life Science's "Dynamic Control" is one of the most advanced monitoring technologies on the market. The monitoring covers the entire washing system and the materials to be processed without being restricted to individual machine components. This means that cleaning of critical devices is reliably checked.

Additional process security through optional rotation control

The movement of the wash arm is monitored by an integrated sensor. If the wash arms no longer rotate correctly, an error message is triggered promptly and the current program is discontinued immediately.



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- 📍 Belimed Life Science Inc.
- 📍 Belimed Life Science AG – Services
- 📍 Belimed Life Science AG – Local Partner

Belimed Life Science AG
 Zelgstr. 8
 8583 Sulgen
 Switzerland
 Tel. +41 71 49 94 000
 info@belimed-lifescience.com

www.belimed-ls.com

