



Validated cleaning, disinfection and drying WD230 / WD250 / WD290

For safety's sake of staff and patients



Decades of experience, perfected engineering and leading edge technology are found all wrapped into one with Belimed products and services when it comes to automated hygiene processing such as decontamination, disinfection and sterilization. Our products are found in reliable daily service at central sterilization centres and operating rooms of renowned hospitals throughout the globe.

The complete family of machine types WD230 / 250 / 290 in summary:

- new design of wash chamber
- efficient decontamination system
- powerful drying
- economical and ecological application of time and energy
- type certified according to prEN ISO 15883
- versatile range of accessories for all applications



Machine	1-door	2-door	Outer dimensions W x D x H in mm	Inside dimensions W x D x H in mm	Automatic loading and unloading Shuttle- system	Capacity per batch					
						Surgical instruments (Sieves)	MIC instruments (Sets)	AN material (Sets)	Sterile goods container 30x15x60 incl. lid + filter cover (pieces)	OR shoes (pieces)	Baby bottles incl. caps (pieces)
WD290	x	x	900x940x1840	610x750x670	x	15	3 – 4	7	5	60	126
WD250	x	x	900x800x1840	610x610x670	x	10	2 – 3	5	4	50	84
WD230	x	x	900x800x1840	610x610x670		10	2 – 3	5	4	50	84



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- 01 Wash (Standard)
1h 30min
- 02 Wash (Standard)
1h 30min
- 03 Wash (Standard)
1h 30min
- 04 Wash (Standard)
1h 30min
- 05 Wash (Standard)
1h 30min
- 06 Wash (Standard)
1h 30min
- 07 Wash (Standard)
1h 30min
- 08 Wash (Standard)
1h 30min
- 09 Wash (Standard)
1h 30min
- 10 Wash (Standard)
1h 30min

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Belimed
ULTRASONIC DISHWASHER
WD 290



Norms consistently applied...

Design

WD290 and WD250 washer disinfectors feature automatic vertical sliding doors. The WD230 is equipped with manual drop down doors. All models have glass safety compound doors.

Featuring over-all machine width of only 900 mm, the high capacity chamber is designed for up to 15 DIN norm baskets for surgical instruments per batch.

The entire machine model range meets stipulations of prEN ISO 15883, e.g. water conduits are kept to a minimal length to prevent 0 dead legs, to ensure that no bio burden problems occur. To prevent chemical and water contamination carryover between each stage of a cycle, the Belimed range of washer disinfectors have self draining chambers and complete drainage of the circulation pump.

Validating necks for insertion of data sensors as well as for sample retrieval are standard.

Decontamination system

Effective performance of decontamination, disinfection and drying of the automats WD230 / 250 / 290 is enabled by efficient conduit design and the powerful recirculation pump. The precision fitting rack docking device ensures that water is supplied to its optimum level, even when processing minimal invasive equipment.

WD250 with automatic safety compound glass doors and automatic loading and unloading station.





WD230 with manually operated hatches and safety compound glass windows.

Disinfection phase

It is the heart of saving time while never losing sight of the most important item, namely the personal safety of patient and machine operator.

The Ao-value concept permits making full use of the entire heat energy between 65°C and 95°C and incorporate it the efficiency equation. It yields significant time saving when compared with conventional, sequential disinfection technology.

Continuous output comparison of 2 sensors is used to monitor the thermal disinfection. Any deviation of readouts is shown on the display.

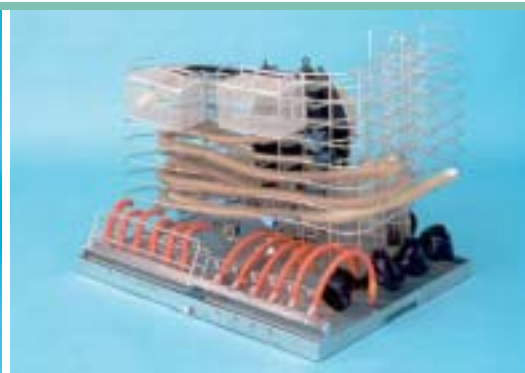
Drying phase

A powerful high performance dryer delivering 500m³/hour enables rapid drying of all types of surgical equipment, including the inner lumens of cannula instruments.

The hot dryer air is transported into the wash chamber by means of the wash goods carrier on the one hand and through direct input on the other. This split air design is responsible for quick and gentle treatment of the wash goods.

Dryer temperature and hold time may be programmed to meet the individual requirements of the wash goods.

The system consists of blower, heater and HEPA filter H13.

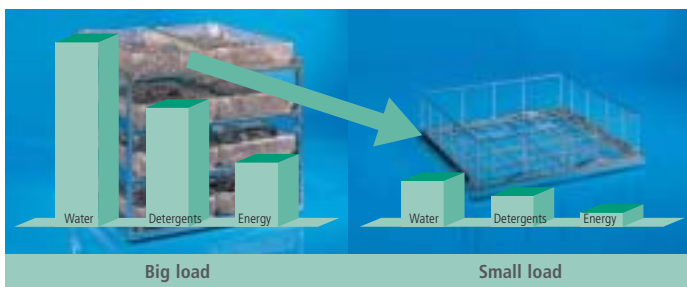


Time and energy management...

Careful management of resources is the Belimed belief in the area of machine design. Water, chemical and energy consumption along with time are kept to a minimum.

Dynamic water control

Automatic control of fill level reduces water, chemicals and heater energy consumption to a bare minimum. Depending on the type of rack and load being processed the exact amount of water is delivered, along with the correct volume of chemicals. So the Belimed WD automats always run with the optimal quantity of chemicals.



Tank for preheating of DI water

Cycle times may be significantly reduced by the option of using a separate pre heat tank for either DI or RO water to predetermined temperature. In order to heed guidelines of the prEN ISO 15883, this tank must be located above the wash chamber. This arrangement also has the benefit of reducing the filling time and heating time of the final disinfection phase.

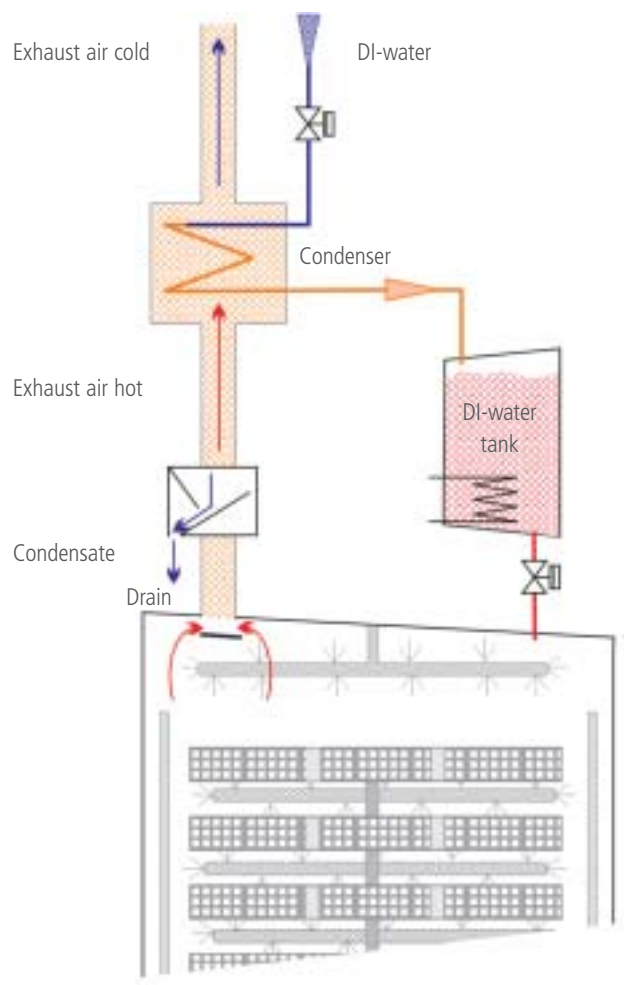
Selecting heater energy source electric / steam

There is an option to have combined electric and steam heating installed with manual or automatic switching, that allows the user to choose between these two heating mediums.

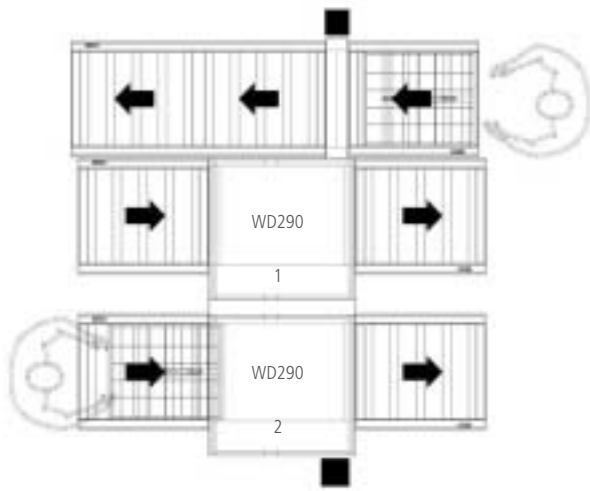
Exhaust air energy recovery

Exhaust air energy recovery and Wrasen condenser. A combination of air condensation, storage of cooling water and pre-heating of the DI/RO water combined, provide customer benefits like:

- Condensing of exhaust air
- Fresh water cooling for this purpose can be used for the wash process
- Regained heat energy is used in the DI/RO water
- Programme cycle reduced
- In case of insufficient water pressure on the DI/RO water line, the filling time is significantly reduced



Reducing manual activities - optimizing material flow



Automatic loading and unloading

Loading and unloading of machines is done by modules, capable of automatically moving the wash good carriers. Rollers, designed to be removable for cleaning and servicing purposes, support these modules. Control of the loading and unloading modules is accomplished by the control unit of the machines and by automatic program selection, that is linked with the rack coding. On account of modular design, Belimed units may be extended and retrofitted at any time.



Fully automated shuttle system

The new shuttle system represents the latest development of Belimed's automated loading feature for decontaminating, disinfecting and drying units.

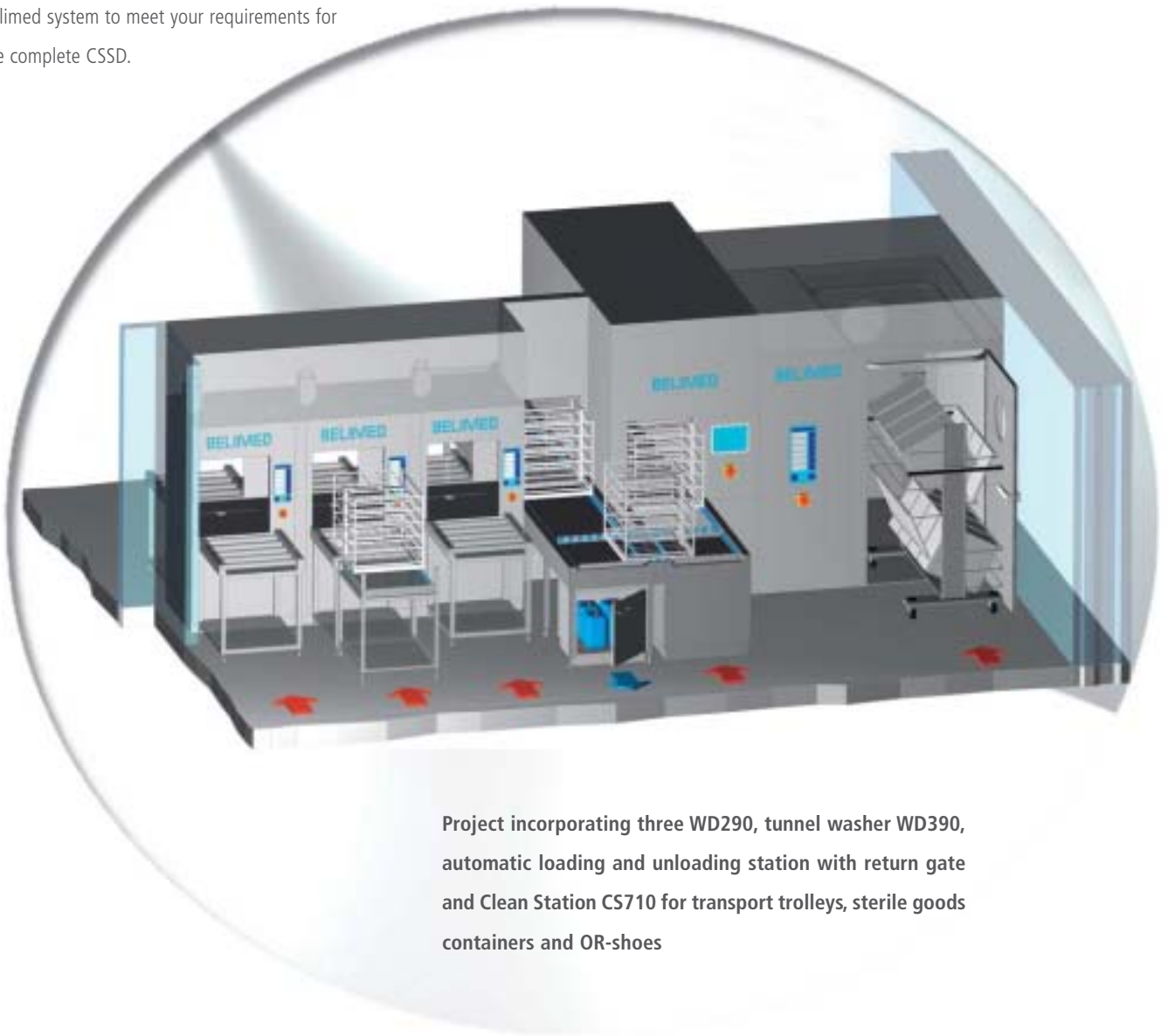
The wash good carriers are placed in front of the machine cluster. The shuttle, designed to move in any of the three directions, controlled by a sophisticated monitoring system, delivers each of the wash good carriers to the first available machine. Thus, waiting time is minimized and perfect work flow is achieved. The equipment may be operated as a complete «merry-go-round» system, thus relieving the operating personnel from the requirement to pushing or lifting racks around.

The design enables easy disconnection of individual system modules for cleaning and maintenance, without interruption of active processes.



Project planning

The Belimed Project department can provide you with the optimal Belimed system to meet your requirements for the complete CSSD.



Project incorporating three WD290, tunnel washer WD390, automatic loading and unloading station with return gate and Clean Station CS710 for transport trolleys, sterile goods containers and OR-shoes

WD290 with unloading station and tunnel washer WD390. Due to it's harmonised design the racks can be used with both systems.



Intelligent program management



Display unclean side

Control / operation

The equipment features a two-line display, capable of assisting the operator in control of the system during operation. This is done by informing the operator about all significant program data such as program step, time requirement, temperature, remaining time, etc., all in direct text display.

Standard equipment includes 12 validated factory programs. From a program data bank, 100 standard programs may be assigned to the program keys, capable of customer specific modifications.

This product range features an Auto-Diagnostic-System, designed to alert the user about potential errors on the display.

Sensors in the control system detect which wash goods have to be decontaminated, disinfected and dried. It automatically selects the appropriate program and starts the process cycle. Thus, operating errors are avoided.

Standard equipment consists of three interfaces, one RS 232 for the scanner, one RS 232 for the printer and one RS 485 for the network.

A modem option offers remote online technical support in diagnosing any fault conditions.

2 x WD290 with loading station and automatic rack return.



IT solutions for any application

Data processing requirements vary from one user to the next, the range from very basic, e.g just a batch printer, to complete management of a CSSD management. Our IT solutions match the full range and complexity of our customers' needs.



Integrated printer

Matrix printer, integrated in front cover of clean as well as unclean side. Essential information such as program step, cycle duration, temperature and potential errors are printed on a paper strip.

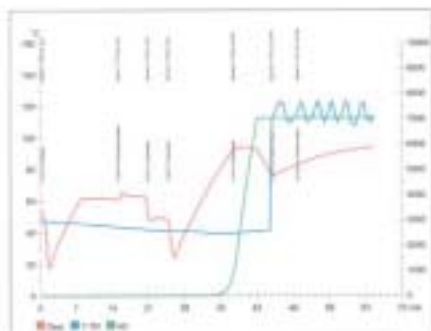
External printer

Batch documentation by means of a separate A4 printer for creation of a comprehensive batch report, including graphics and processing data.

Batch documentation 16/11/2016 09:58:58

Parameter	Value	Unit	Min	Max
Temperature	121	°C	121	121
Pressure	1.5	bar	1.5	1.5
Time	120	min	120	120
Water	100	liters	100	100
Energy	100	kWh	100	100

Report Summary: Program 121212



Centralised documentation system (ICS 8535)

Comprehensive process data of the decontaminators and sterilisers are acquired and stored in a central database, then edited for concise documentation and, if desired, printed.

Thus, all components of the equipment array are connected with a data acquisition PC that is designed to accumulate current process data from the connected machines.

A SQLBase-database is at the heart of the PC, enabling recall of any and all information at any time.

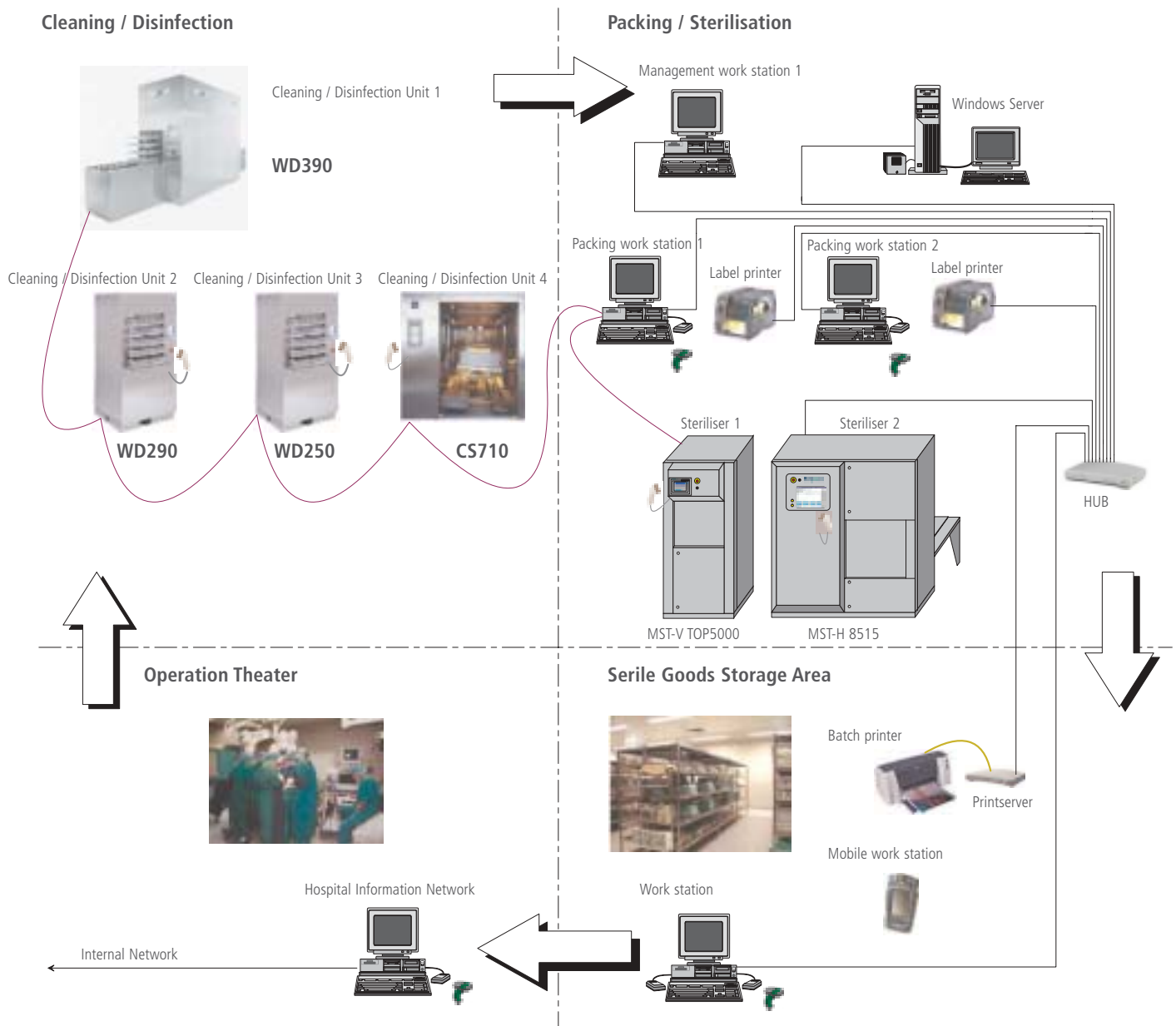
The central documentation system 8535 features modular design, thus enable later addition of new equipment by means of interface RS 485 or Ethernet.

Central documentation system with material acquisition (ICS 8535 - BC)

The Belimed documentation software ICS 8535-BC assures proper identification of all sterile goods within the entire circular flow. Thus, consistent back tracking of all data is guaranteed.

With this system of material acquisition, bar codes attached to instrument racks are read at the machines by manual scanner and thus assigned to the appropriate decontamination and disinfecting processes.





CSSD management system (ICS 8565)

With the ICS 8565 CSSD management system, instrument racks data are acquired already when going through decontamination and disinfecting. Following the decontamination process, the sterilised goods (in soft or hard packaging) are again data acquired and thus linked with the preceding decontamination process. Once the instrument batch is sterilised, it may be stored under reference of department and cost assignment selection. Following application, the goods are again returned to the decontamination area, thus closing the decontamination loop.

This system is also based on a client-server application which has an SQLBase-database at its core.

Independent process data acquisition

With the norm pr EN ISO 15883, a second and completely independent monitoring system becomes mandatory. In order to warrant backtracking of data, all process sensitive parameters such as pump pressure, water and air temperature plus conductivity of the final rinse water must be collected and archived by a PC network.

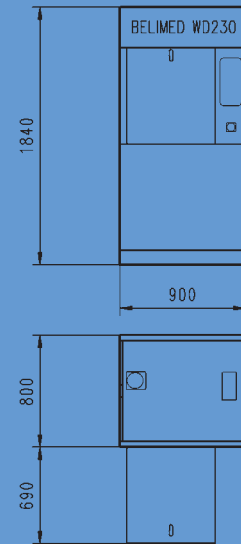
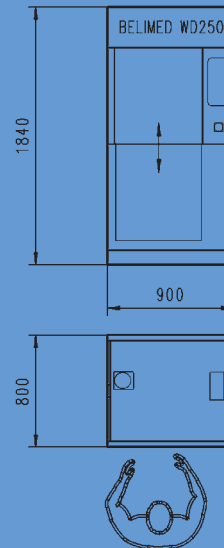
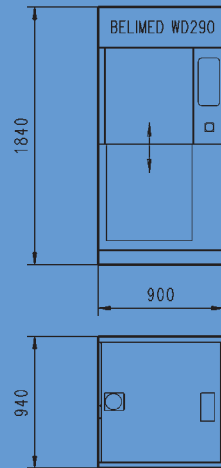
Belimed meets this requirement using its proven option, called «Independent data archiving system».

Technical data

WD290

WD250

WD230



Rack dimension (w x h x d)		610 x 670 x 750 mm	610 x 670 x 610 mm	610 x 670 x 610 mm
Water connection	Cold water	3/4" 200-600 kPa (2-6 bar)	3/4" 200-600 kPa (2-6 bar)	3/4" 200-600 kPa (2-6 bar)
	Hot water	3/4" 200-600 kPa (2-6 bar)	3/4" 200-600 kPa (2-6 bar)	3/4" 200-600 kPa (2-6 bar)
	DI-water	3/4" 200-600 kPa (2-6 bar)	3/4" 200-600 kPa (2-6 bar)	3/4" 200-600 kPa (2-6 bar)
Drain connection		DI 56 mm (DN50)	DI 56 mm (DN50)	DI 56 mm (DN50)
Electr. connection Power		400V 3N AC, 50 Hz P 25kW (Fusing 40A)	400V 3N AC, 50 Hz P 16kW (Fusing 25A)	400V 3N AC, 50 Hz P 16kW (Fusing 25A)
Exhaust air connection		DA 115mm (DN100) 500m ³ /h	DA 115mm (DN100) 500m ³ /h	DA 115mm (DN100) 500m ³ /h
Steam connection (optional)	Saturated steam	R 1/2" 200-600 kPa (2-6 bar) 130°C	R 1/2" 200-600 kPa (2-6 bar) 130°C	R 1/2" 200-600 kPa (2-6 bar) 130°C
Electrical power with steam heating		P 13kW (Fusing 25A)	P 13kW (Fusing 20A)	P 13kW (Fusing 20A)

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