

WD 290 IQ

Application

For use in healthcare facilities, for processing reusable instruments, containers and other solid objects, as well as for rigid endoscopes, eye instruments and instruments used in the field of neurosurgery.

Description

The WD 290 IQ washer-disinfector was developed to ensure maximum quality through efficient washing, disinfection and drying of instruments, containers and accessories while minimizing the utilization of natural resources.

With a stainless steel chamber and a unique high-volume/low pressure water circulation system, up to 18 DIN trays can be reprocessed. Disinfection can be run with $A_0 > 3,000$, as per EN ISO 15883-1.

The WD 290 IQ is available with two automatically operated vertical full glass sliding doors for visual monitoring during the entire reprocessing process.

Consistent process reliability is ensured, since the machine monitors all relevant performance parameters through the independent process data monitoring system.

The WD 290 IQ washer-disinfector is distinguished by the following features:

- 2 intuitive touchscreen for easy operation
- Patented process status indicator
- Wash chamber with large capacity for up to 18 DIN trays
- Minimal footprint with a width of only 900 mm (35,4")
- Resource savings of up to 30% over past models
- Optional DI-water preheating and water process tank
- Independent Process documentation
- 3 cleaning agent pumps with 3 flow meters and 3 empty-level indicators (optional up to 5)
- Disinfection monitoring function, $A_0 = 3,000$
- Optional integrated printer on loading or unloading side
- USB port for import and export of wash cycles parameters, wash cycles and event statistics
- Internal memory for at least 1,000 wash cycles

Dimensions

■ = standard O = option

Wash chamber H x W x D:	690 x 630 x 800 mm (27,1" x 24,8" x 31,5")
Net wash chamber capacity:	350 liters (12,3 ft ³)
Gross wash chamber capacity:	442 liters (15,6 ft ³)

External dimensions:

■ Standard model H x W x D:	1,840 x 900 x 940 mm (72,4" x 35,4" x 37,0")
O Model with tank H x W x D:	2,210 x 900 x 940 mm (87,0" x 35,4" x 37,0")

Features, standards & options

Door configuration

- Two full glass sliding doors, automatic, vertical



Supply

- Electric, 208 V 3 N/AC 60 Hz
- O Steam connection

Standard configuration

- WD with drying system
- EN ISO 15883-1/-2 compliant
- Automatic full glass doors
- Operating panel with 10.4" touchscreen on the loading and unloading side
- Integrated data storage for over 1,000 wash cycles and unlimited event list
- Smart Fill, including frequency-controlled wash pump
- Soft start
- Patented process status indicator
- Illuminated washing chamber
- 3 water supply connections (warm/cold/DI)
- AISI 316L washing chamber
- Exhaust air connection with flap and condense drain
- H13 HEPA filter
- Independent Process Documentation IPD
- Disinfection monitoring, $A_0 = 3,000$
- USB interface
- 3 x dosing units (pump, flow meter, empty-level indicator)
- Automatic program recognition (magnets)
- 15 pre-set programs

Options (factory installation)

- O Wash chamber heating system with steam heat exchanger
- O Rack drive set for automation

Racks and carts

- O Instrument rack, 1 level – 5 level
 - O MIS rack
 - O Container rack
 - O Transport cart
- etc. (up to date rack portfolio: please see www.belimed.com)

Standards

Only those standards which are listed in the current declaration of conformity apply.

Directive 93/42/EEC concerning medical devices

Safety:	IEC/EN 61010-1 IEC/EN 61010-2-040
EMC:	IEC/EN 61326-1
Drinking water:	EN 1717
Cleaning performance:	EN ISO 15883-1, -2, certified by HygCen GmbH, Schwerin

Standard configuration: construction and functions

Washing chamber – chromium steel, type 1.4404 (AISI 316L). The washing chamber and the washing sump have a self-draining design.

Washing chamber lighting – The washing chamber is illuminated by 2 long-lasting, electricity-saving LED lamps.

External material – Chromium steel, type 1.4301 (AISI 304), combined with a HiMacs® cover

Door construction/insulating safety glass – The doors are vertically operated fully automatic sliding doors.

Safety switch actuator – The upper side of the door is equipped with a safety switch actuator to prevent closure of the door when objects are located within the closure area of the door.

Washing chamber sealing – Circumferential silicone seal.

Wash arms – One located at the top of the washing chamber and another at the bottom. Additional wash arms are located on each level of the racks.

Automatic water inlet temperature control – The controller mixes cold and warm water to meet temperature set-point.

Filtering – Incoming water is filtered through two screens (2 mm mesh width). Both filters can be removed and cleaned from the loading side.

Heating system – The WD 290 IQ can be configured with an electric or steam heating system for the washing chamber.

Bi-Turbo drying – The high-volume drying system uses two powerful blowers (each adjustable between 136-600 m³/h), which generate 10.5 kW. The drying temperature can be adjusted from room temperature up to 120°C. The room air is passed through an H13 HEPA filter.

Exhaust air flap with condensate drain – Automatically operated when there is excess pressure in the chamber.

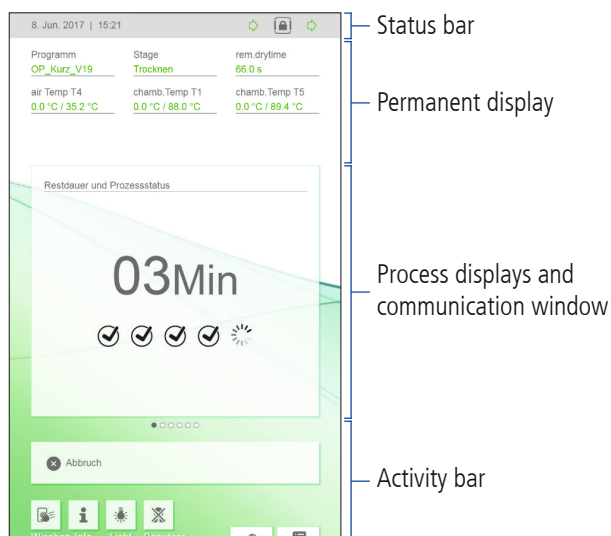
Microprocessor controller – The microprocessor controls of all system functions and the monitoring of all operating processes. Up to 100 freely definable programs can be called up via a touch operating panel.

A self-diagnosis system executes test routines on a regular basis to identify potential errors. The various input signals are monitored, and possible deviations from the target values are indicated by visual and acoustic signals.

Integrated memory – Storage of approx. 1,000 wash cycles. Additionally, all warnings, alarms, possible malfunctions and all user interactions are stored.

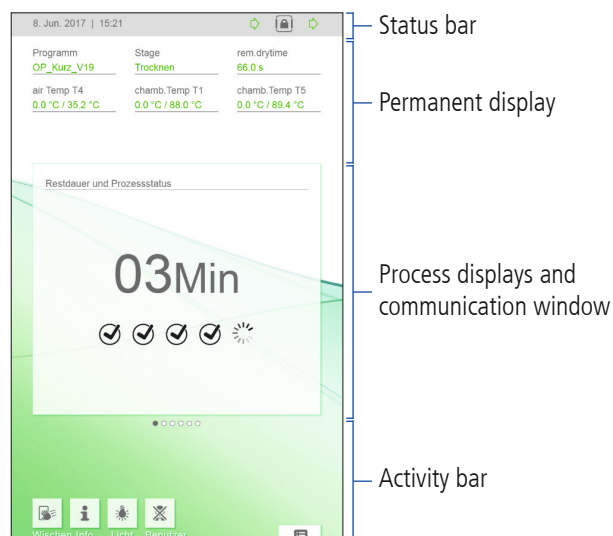
Potential-free contacts – 4 potential-free contacts are available.

Operating panel – loading side – 10.4" touchscreen, comprising the following:



- **Status bar** – General information incl. time and date, error messages and status, etc.
- **Permanent display** – Relevant values are continually displayed on up to 3 lines, e.g. wash chamber temperature, water consumption, A_0 value.
- **Process display and communication window** – All process-relevant data are displayed here. The operator can choose between 6 displays. The user can define what information is displayed during the wash cycle. Warnings and error messages are always displayed in this section.
- **Activity bar** – Various commands, such as program start, light On/Off, are displayed here. The ability to open the complete menu, optionally prepare the next cycle, log on as an operator, cleaning the screen, abort a wash cycle, etc. is also located here.

Operating panel-unloading side – 10.4" touchscreen, comprising the following:



- **Status bar** – General information incl. time and date, error messages and status, etc.
- **Permanent display** – Relevant values are continually displayed on up to 3 lines, e.g. wash chamber temperature, water consumption, A_0 value.
- **Process display and communication window** – All process-relevant data are displayed here. The operator can choose between 6 displays. The user can define what information is displayed during the wash cycle. Warnings and error messages are always displayed in this section. If an error is pending on the loading, side or the next loading process is pending there, then this is also indicated.
- **Activity bar** – Various commands are displayed here. The ability to open the complete menu, optionally prepare the next cycle, log on as operator, cleaning the screen, wash cycle release, etc. is also located here.

Patented process status indicator – Important process information, such as the remaining run time, readiness for loading and unloading, and malfunctions, is displayed on the process status indicator which can be clearly at a distance.

If the remaining run time is still over 60 minutes, then this is indicated by a rapidly moving cursor. If the remaining run time is less than 60 minutes, a clock that builds up successively is displayed.

The end of the process is indicated by the display of a complete clock that flashes. The status indicator is turned off when the door is opened.

An error in the process is indicated by a complete clock that flashes red.

Smart Fill water intake – The machine adjusts the amount of water required to the actual quantity of items to be washed (rack and items to be washed). This unique function enables lowest water consumption. With Smart Fill, up to 30% resource savings per cycle is possible.

Thermal disinfection following the A_0 principle – The WD 290 IQ is equipped with A_0 value calculation.

Independent Process Data monitoring (IPD) – All relevant parameters are continuously monitored by independent sensors. Discrepancies between actual values and target values lead to an error message and/or the immediate termination of the program.

Fully draining, frequency-controlled circulation pump – The stainless steel circulation pump can circulate 950 liters (250 gallons) per minute. To prevent water residual in the pump, it drains completely between cycles.

The frequency-controlled circulation pump allows, the water pressure to be adjusted for each specific wash cycle step.

Soft start of the circulation pump – To keep the physical water impact, which occurs when the circulation pump is started, as low as possible the WD 290 IQ is equipped with a soft start function. As a result, the reprocessing is gentle on the material.

Dosing pumps – Up to 5 pumps (3 included in the base model) can be installed for dosing cleaning and lubrication agents. Flow monitoring is ensured by the flow meters.

Chemicals-empty-level indicator – The WD 290 IQ can be connected either to a central chemicals supply, or directly to chemical canisters. Each of these canisters can be equipped with an empty-level indicator which sends a signal to the controller when the level of chemical is too low.

Dosing of chemicals – Based on the amount of water in the wash chamber and the recommended concentration, the controller calculates the required amount of chemicals. Flow meters and peristaltic pumps enables precise dosing.

Foam control – If excessive foam is detected in the pre-rinsing step, then the pre-rinsing step is automatically repeated.

Interfaces – Ethernet and USB

Data and machine parameters can be imported or exported anytime using the USB interface.

The Ethernet interface provides data to the optional Belimed cycle documentation system.

Servicing access – Servicing access is at the front, below the chamber, as well as a drawer for easy access to the controller and the electronic system.

Main power switch – The machine allows easy access to the main switch power to turn off the entire machine. Access is located on the loading side.

Emergency stop switch – The WD 290 IQ can be stopped immediately by activating the emergency stop switch.

Cycle documentation – The optional built-in printer documents important measurement parameters during the washing and disinfection process. The complete cycle can be printed out, either at the end of reprocessing, or upon command, etc., depending on desired configuration. The printout includes washing cycle step, pressure and temperature indicators, start time, date, logged in user, name of employee which released the cycle, WD and washing cycle number, and all errors that have occurred during the process.

Rack-docking device – A central docking device for the rack is located on the washing chamber floor. The docking device is pressed against the rack with water pressure, enabling optimal water distribution.

Automatic Cycle start – The WD 290 IQ automatically recognizes the loaded rack and starts the wash cycle. The rack recognition works with magnets on the rack. Which allows coding for each cycle.

Automatic maintenance message – The controller provides an early servicing date notification on the screen.

Options: construction and functions

DI-water pre-heater (electric/steam) – This enables pre-heating of the DI-water to 93°C for thermal disinfection. Supplied with all electrically heated machines.

Storage tank – The optional storage tank enables storage of the thermal disinfection water. This stored water can be used for the rinse step in the next wash process, reducing water consumption by almost 25%.

After a pre-set minimum temperature in the range of 40-80°C has been reached, the stored water is discarded.

Automatic transport – A drive motor, which is designed for loads of up to 120 kg, is installed for automatic loading.

Drain pump – If physical drainage below the machine is not possible, a drain pump can be installed.

External printer – Can be installed on either side but recommended for the unload side.

Additional dosing pumps (Pharmed®/Viton®) – The WD 290 IQ includes 3 dosing systems (incl. dosing pump, flow meter and empty-level indicator). 2 additional dosing systems can be added.

Self-disinfection of the machine – If the device is not in operation for a certain period of time, a self-disinfection process can be automatically started.

Automation

A variety of automation systems are available from dedicated, powered conveyors at each washer on the load and/or unload sides (SISO), to a shuttle driven closed loop system, the WA 290 automation system.

These systems will automatically load the rack, start the wash cycle and then unload when the cycle completes.

A powered single window (Gate) is used with manual or powered conveyors to return empty racks to the decontamination area of the CSSD.

Easy installation

Apart from water, DI-water, waste water and exhaust air lines and electric supply lines (optionally also steam supply lines), no further connections are required. Furthermore, those options which make the machine higher than a normal door can be dismantled in a minimum of time and can be set up again on site.

Cleaning agents and disinfectants

The Belimed Protect™ product portfolio was developed and validated for the WDs from Belimed in order to meet the requirements of ISO 15883. Belimed offers a complete integrated solution for automatic reprocessing.

Contact Belimed for more information on the Belimed Protect™ product program: enzymatic cleaner, alkaline cleaners, neutralizer, instrument lubricants, final-rinse and drying aids.

Preventive maintenance

Belimed recommends preventive maintenance on a regular basis to ensure the proper functioning of the device. Belimed has a nationwide network of trained service technicians who carry out these maintenance tasks on site.

Connections/electrical connection values – see installation drawings and Technical Manual.

Disclaimer

Do not use this product description for installation of the machine. The product description can be updated without notice and is only updated periodically.