Automated flexible endoscope reprocessor with single-channel control

Product Description
WD 430

Belimed
Infection Control

Engineers of Confidence.

Use

The automated endoscope reprocessor (AER) for flexible endoscopes is designed for use in healthcare facilities, such as central sterile services departments (CSSD), hospitals and care facilities, as well as doctors' offices.

Description

The WD 430 was developed to simultaneously clean and disinfect flexible endoscopes made by different manufacturers and different endoscope types. The appliance can reprocess two endoscopes with up to five channels or one endoscope with up to 10 channels.

The endoscopes can even be prepared outside the appliance with the easy-to-use racks while a cleaning cycle is running. The ergonomic loading height, automatic basket docking system, and user-friendly handling ensure a quick re-processing cycle.

The double-door design creates a distinct separation between the clean and unclean side, thereby ensuring the highest level of hygiene.

The WD 430 is fitted with a highly functional single-channel control function. This guarantees that every channel in the endoscopes is reproducibly cleaned and disinfected.

The single-channel control function maintains the monitoring and measurement of flow in all channels, including the jet and Albarran channels. This provides the user with assurance that blocked or incorrectly connected channels are automatically detected, in accordance with standard EN ISO 15883-4.

The WD 430 automated endoscope reprocessor is characterized by the following features:

- Ergonomic product design
- Washing chamber designed to the highest hygiene standards
- Patented process status display
- Low media consumption due to the Dynamic Filling system
- Minimal footprint with a width of only 900 mm
- A range of options to ensure the right solution for spaces of all sizes (CSSDs)
- Independent process data monitoring for maximum safety
- Redundant sensors monitor all critical process parameters
- Reliable control and inspection of each endoscope channel for connection, flow, and blockage using the proven Belimed single-channel control unit
- Complete data logging over the entire cycle

As an expert in the field of hygiene, Belimed offers safety throughout the entire cleaning and disinfection process with its own Belimed Protect™ chemistry portfolio, as well as the best material compatibility.

Dimensions

Wash chamber:	H x W x D: approx. 300 x 590 x 480 mm

External dimensions including cover:

Single-door model:	H x W x D: 910 x 900 x 640 mm (including door handle)
Double-door model:	H x W x D: 910 x 900 x 740 mm (including door handle)

Equipment, standards and options

Electrical connection: 400 V, 50 Hz; 3N/AC
Electric tank heater: 6.9 kW

Doors

- Two manual full-glass hinged doors
- One full glass hinged door, manual, and with a back wall

Standard configuration

- AER with drying step
- EN ISO 15883-4 compliant
- ECU controller
- Intuitive control panel
- Built-in printer for batch documentation
- Barcode scanner
- Patented process status display
- Integrated exhaust air condenser
- Integrated drainage pump
- Integrated base tray including float switch
- 2 dosing pumps
- 2 flow meters for dosing
- 2 empty detergent indicators
- Washing chamber made entirely from AISI 316L stainless steel
- Supply air filtered with a HEPA H13 filter
- Continuous monitoring of the supply air filter
- DI water preheat tank
- Independent process data (IPD)
- RS 232/RS 485 interfaces (ICS 8535 for batch documentation)
- 2 potential-free contacts
- Media connections for the single-door model at the back/for the double-door model on the left
- Conductivity measurement
- Continuous leakage testing
- Rack 1 level for 1 flexible endoscope
- Disinfection plate for thermal disinfection of the chamber

Options (as per the price list)

- Stainless steel base
- Reprocessor cover
- Spacer plate
- Panels
- Rollers for base
- Media feed-through
- Level indicator set for 10 liter cannisters (GAA/PAA)
- 3rd dosing, only combined with stainless steel base
- Rack, 1st and 2nd levels
- Rack complete
- Cart connection adapter, level 1, 2, single
- Small components basket
- Endoscope and Belimed Endo connector holders
- Rack accessories
- Water bottle connector
- External printer
- Data export via ICS and SmartHub

Standards*

Area	Standard
Medical Devices Directive	93/42/EEC
Electromagnetic Compatibility	2014/30/EU/EC/UE, EN IEC 61326-1, EN 61000-4-X
Low Voltage Directive	2014/35/EU/EC/UE
Machinery Directive	2006/42/EG/EC/CE
Safety of Measurement Equipment	EN IEC 61010-1, EN IEC 61010-2-040
Washer-disinfectors	EN ISO 15883-1, -4
Protection of Potable Water	EN 1717

*only the stated standards in the declaration of conformity are valid

Design and functions

The disinfection chamber is made of Type 1.4404 (AISI 316L) stainless steel and designed to fully self-drain after each cycle. The small chamber volume guarantees optimal media consumption and excellent and cost-effective re-processing. Due to self-drainage and spatial separation, cross-contamination can be excluded.

Outer material

All paneling is made of AISI 304 type chrome steel. Consequently, all surfaces are corrosion-resistant and easy to clean.

Illuminated washing chamber

LED lights allow visual control of the cleaning and disinfection process in the chamber.

Door design

The double-glazed doors are manually operated. The integrated door drainage channel enables the door to be opened and closed without any dripping.

The reprocessor is fitted with automatic door opening and allows contactless and hygienic removal of endoscopes at the end of the cycle.

The open doors form a practical shelf and enable user-friendly loading and unloading. Additional working surfaces or cumbersome transport carts are not necessary.

Loading and connection

The operators can fully connect the endoscope channels to the rack outside the machine and even prepare the next endoscopes while the machine is running. At the end of the cycle, the new rack can be put directly into the machine and the next cycle can be started. No further connections are required inside the machine. This reduces idle time in the department to a minimum.

Available programs
The machine is supplied with three tested programs. The flexible program library can individually store up to 12 programs. These can be directly accessed via the control panel.

Internal monitoring
The reprocessor continually monitors and logs the parameters and any error messages for all components. This data can be viewed on-site by a Belimed technician for diagnostic purposes. This guarantees rapid troubleshooting.

Independent process data monitoring (IPD)
All process-relevant parameters are continuously controlled by independent sensors. Deviations between the actual and set values result in an error message and/or an immediate program abort.

Supply
- Electrical: 400 V, 50 Hz; 3N/AC

Belimed Endo connectors (BEC)
Belimed offers a suitable adapter for a wide range of endoscope types. This adapter has color-coded tubing that enables every user to connect the endoscopes correctly. Connection errors are thus largely eliminated. The BEC can be configured and delivered according to customer specifications (an endoscope list).

Easy installation
The WD 430 cleaning and disinfection device is quick and easy to install. Apart from water, DI water and electricity, no further connections are required. The integrated exhaust air condenser is standard.

Service access
For easy service access, components such as the controller and air filter are located behind the rotatable operator panel. The other main components are located next to them behind a removable front panel. For the double-door model, access must also be provided to the clean side.

Rotating wash arms
Rotating wash arms are at the top and bottom of the washing chamber for external cleaning of the endoscopes. The WD 430's wash arms are equipped with extra-large special spray openings for extensive media spray flow. As a result, all surfaces are optimally wetted and highly effectively cleaned and disinfected.

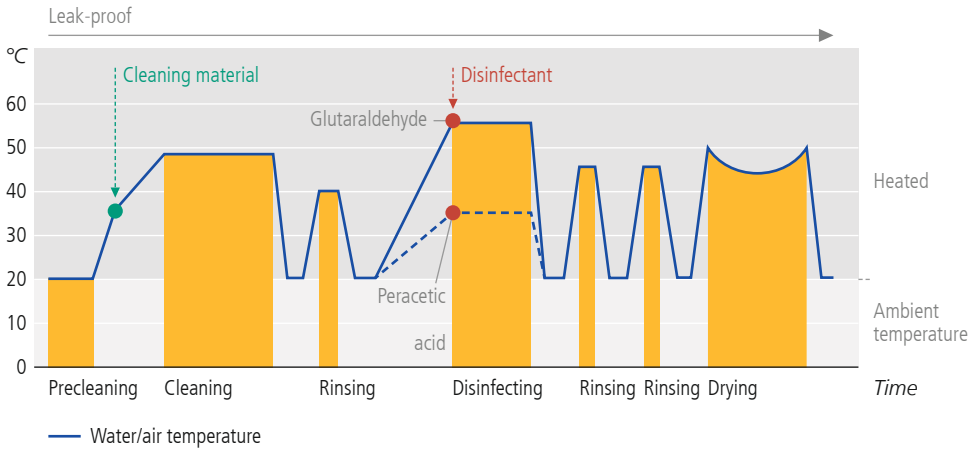
The wash arms can be dismantled for inspection and cleaning in just a few steps. Consequently, the wash arms in daily use can be thoroughly cleaned and any residue or blockages in the nozzles removed. Cleaning and disinfection performance is consistent.

Circulation pumps
Two independent circulation pumps ensure gentle internal and external cleaning of the endoscopes.

Fully draining pumps
To prevent water residue in the pump housing, the pumps fully drain between each cycle. This reduces the risk of bacterial residues and prevents cross-contamination.

Active air purging
Drying system, capacity is at 250 m^3/h, combined with a heating capacity of 0.8 kW. The air is passed through a HEPA H13 filter system and is therefore practically sterile.

AER standard process



Reprocessing description

During one cleaning and disinfection cycle, up to 2 endoscopes, including the channels, are cleaned and disinfected.

The WD 430 is equipped with the single-channel control function. As a result, every cleaning stage is monitored to see whether sufficient rinsing fluid can flow through the individual channels. If the channels are blocked or leak, the reprocessor detects this and reports it as a fault.

The endoscopes can be removed hygienically after cleaning and disinfection.

Chemical disinfection of flexible endoscopes

The WD 430 facilitates chemical disinfection of the flexible endoscopes with both glutaraldehyde and peracetic acid. This allows the operator to select based on preference or local recommendations.

Self-disinfection

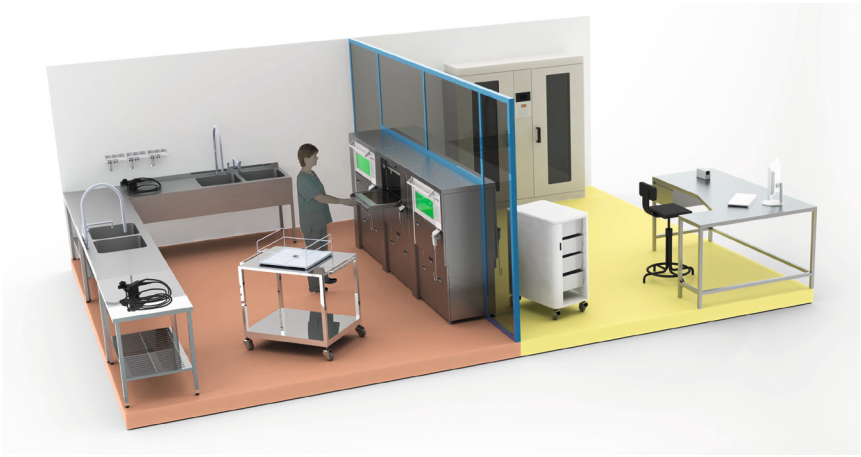
The AER is equipped with thermal self-disinfection. Even in the event of a high microbial load, a self-disinfection cycle is sufficient to disinfect the AER (including the rack). Daily self-disinfection is the best way to prevent contamination.

Detergents and disinfectants

The Belimed Protect™ product portfolio is matched to and validated with Belimed's AER. Belimed offers a completely integrated solution for automated reprocessing.

Separation of the clean and unclean sides

Complete spatial separation between clean and unclean is an effective protection system against cross-contamination. The WD 430 offers this possibility thanks to the corresponding installation of its 2-door version with mutual door interlocking.



Separation of the clean and unclean sides

Standard configuration

Control system
The reprocessor is controlled by a microprocessor-based control system.

Operating display
The system is operated via a simple membrane keypad at an ergonomic height on the loading and unloading side. Input data is displayed on both sides on an easily readable 2-line LCD display.

Batch documentation
The built-in printer documents important measured variables of the cleaning and disinfection process. The printout includes the information on the respective cleaning cycle, pressure and temperature sensors, start time, date, AER and cleaning cycle number, as well as any errors that occurred during the process.

The cycle documentation can be retrieved in the form of a PDF via a network PC and printed on any network printer.

Barcode scanner
A barcode reader is fitted underneath the operator panel at the factory. This can be used for program selection or for error-free entry of serial numbers or operator names.

Process status display
The easily visible process status display is located on the loading and unloading side above the display and shows the current machine status. For example, remaining runtime, readiness for loading and unloading, and malfunctions can be detected at a glance.

Exhaust air
An exhaust air condenser is fitted in the factory. Optionally, the device can be connected to an active exhaust air system. This is recommended in small rooms as the air emissions can result in high levels of pollution. When using peracetic acid (PAA), connection to an active exhaust air system is mandatory.

Drain pump
The integrated drain pump facilitates active emptying of the reprocessor after each cycle. It has a maximum delivery height of 1 meter.

Installed floor pan
The reprocessor is mounted on a stainless steel floor pan. An integrated float switch generates an alarm when liquid escapes.

Dosing units
Two dosing units for detergents and disinfectants are fitted in the reprocessor at the factory. An additional dosing unit for an extra detergent reservoir can be ordered. An exact dose is guaranteed by redundant flow sensors. The corresponding suction lances are fitted with a level indicator.

Monitoring the air filter
The differential pressure through the air filter for the drying air is permanently monitored. This prevents the machine from being operated with a defective filter and any contamination of the endoscopes with contaminated air.

DI water preheat tank
The DI water tank is used to disinfect the final rinse water. It holds 23 liters and is equipped with an electric heater and a recooling device. This thermally disinfects the deionized water for the last two rinsing steps during the cleaning cycle and brings it back to a safe temperature for flexible endoscopes.

This system is also used as a DI preheat tank for the thermal reprocessing of endoscope accessories.

Interfaces
The machine has one interface each for the RS 232 and RS 485. These are required for the connection of the ICS. Furthermore, the machine has two potential-free contacts ex works, which can be used for communication with the building automation system.

Conductivity measurement
The WD 430 is supplied with a sensitive conductivity sensor. This is used to check that there is no residual detergent or disinfectant in the reprocessor during the final rinse.

Leakage test
The automated, continuous leakage testing of the WD 430 works accurately and consistently to detect even the smallest leaks in the endoscope.

Rack and basket for a flexible endoscope
A rack with a basket for an endoscope is included in the delivery of the reprocessor. An endoscope with up to 10 channels can be reprocessed.

Disinfection plate for thermal disinfection of the chamber
An additional disinfection plate is fitted in the chamber for self-disinfection of the WD 430.

Options

Ergonomics
The WD 430 is available as an under-bench reprocessor or with a stainless steel base. The stainless steel base gives the AER an optimal ergonomic loading height. Loading and removing the endoscopes is easy and comfortable in an upright position.

In addition, a third detergent or disinfectant can be stored in the base.

Paneling
With appropriate cladding, the machine can be installed free-standing in a room, against a wall, or as a pass-through between two rooms. All free sides can be covered with stainless steel (AISI 304) paneling.

Casters for the stainless steel base
If the reprocessor is placed directly against a wall, easy access to the rear of the reprocessor for a service technician can be provided by casters on the base.

Racks and baskets
In addition to the rack provided, further racks with one or two levels including the matching baskets are available.

Endoscope and BEC holder
In order to store the endoscopes and the BEC safely and easily in an accessible place, Belimed has developed appropriate holders.

Water bottle connector
If reusable bottles are used, they can be cleaned with the endoscope. They are optimally prepared for subsequent sterilization.

External printer
An external printer compatible with the reprocessor.

Seamless traceability
Belimed software solutions provide an optimal interface between our devices and your instrument tracking system.

The batch documentation can be retrieved as a PDF via a network PC and printed on any network printer.

During each service visit, we store the device data as a backup copy for performance analysis. This means you benefit directly from our knowledge of the performance of your devices and systems.

Preventive maintenance
Belimed recommends regular preventive maintenance to ensure proper functioning of the device. Belimed has an extensive network of trained service technicians who can perform this maintenance on site.

Disclaimer
Do not use this product description to install the machine! This description can be amended periodically at any time without notification.

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