

EW 1

Automated endoscope reprocessor (AER)



Steelco EW 1 has been developed to be compliant with the standard UNI EN ISO 15883-4 and UNI EN ISO 14937.

EW 1 is an automatic device for the reprocessing of one (1) flexible endoscope or up to two (2) video-broncho/cystoscopes or up to four (4) single-channel fiber broncho/cystoscopes of the major brands.

It also allows the reprocessing of rigid endoscopes with dedicated washing carts.

EW 1 has been validated for low temperature high level disinfection and liquid sterilization processes and it can perform the thermal self-disinfection, as recommended by the standard UNI EN ISO 15883-4.

Highest flexibility is granted by the compact design, which assures low cycle costs reducing consumption of water, chemicals and energy.

Models

The AER is available as **single door** or **double door** pass through versions.

EW 1 is also available in a *Rack* configuration having two units installed one on top of the other in a unique frame structure, in order to exploit small spaces and enable the asynchronous treatment of two endoscopes.

The *Rack* configuration is available both with single and double door.

Specifications

Single unit dimensions

External dimensions

Single door: 600 mm x 630 mm x 945 mm

Double door: 710 mm x 570 mm x 1206 mm

Washing chamber

415 mm x 480 mm x 375 mm

Loading height

Single door: 683 mm

Double door: 950 mm

Door passage

415 mm x 260 mm

Rack configuration dimensions

External dimensions

Single door: 750 mm x 690 mm x 1643 mm

Double door: 860 mm x 570 mm x 1663 mm

Washing chamber

415 mm x 480 mm x 375 mm

Loading height

Single door – lower chamber – 712 mm

Single door – upper chamber – 1322 mm

Double door – lower chamber – 720 mm

Double door – upper chamber – 1350 mm

Door passage

415 mm x 260 mm

Water consumption

6 liters per chamber fill

Sound level

< 60 dB

Certifications

EW 1 is classified class IIb, according to rule 15 of Annex IX, 93/42/EEC Medical Device Directive.

EW 1 is compliant with the standard EN ISO 15883 parts 1, 4 and 5.

EW 1 is compliant with the standard EN ISO 14937.

Construction

Exterior

- Main frame made of stainless steel AISI 304 (DIN 1.4301).
- Panels made of AISI 304 MS2 finish.

Hinged Door

- Stainless steel frame hinged door.
- The glass door grants total visual monitoring of the process and it is realized with a double HST (High Shock Tested) tempered glass.
- Interlocked doors in case of double door version.

Washing Chamber

- Constructed using AISI 316L BA Ra < 30µin (Ra < 0.8µm).
- Designed and constructed with smooth edges and corners to allow the total chamber draining at the end of the cycle and to avoid areas where dirt can accumulate and allow bacterial growth.

Components

- Manufactured using stainless steel and other materials which are resistant against the effects of aggressive detergents.

Insulation

- High performance melamine insulation guards for thermal and acoustic insulation.

Standard features

Loading/unloading doors

- Door locking system during cycle execution to guarantee operator safety and to prevent any interference with the washing cycle.
- The double door model is equipped with an automatic interlock system to keep the dirty/clean areas separate.
- Open doors also work as a stand for the washing

cart during loading and/or unloading operations and as an anti-dripping surface, thus helping keep the floor dry, clean and safe.



Endoscope loading and connection to the AER

Steelco EW 1 is equipped with a removable washing cart made of stainless steel, with guiding rails to ease its pull-out and allow the ergonomic load of one big size flexible endoscope. Such washing cart can be similarly pulled out from the opposite side in double door versions at the end of the cycle.

Washing system

- Washing circuits with two (2) dedicated pumps:
 - For the washing arms placed on the top and on the bottom of the washing chamber. They are set to grant an efficient dynamic washing flow which allows a thorough endoscope cleaning.
 - For the basket connection and endoscope channels.
- Spray arms, made of AISI 316L stainless steel, which can be easily disassembled for cleaning and maintenance operations.
- The drain system grants the complete emptying of the washing chamber and the hydraulic circuit.

Water connections and filtration

- Two (2) water line connections available for softened cold/mixed and demineralized water.
- Water line is equipped with two (2) flowmeters for the control and validation of water quantity introduced in the chamber.
- Water filtration system through a sequence of two filters (one 0.45 µm and one 0.1 µm filter).
- The dual stage water filtration system not only ensures the presence of a microbiologically adequate final rinse water, but it also filters and ensures the high quality of all the water used in the disinfection phase.
- Filters are automatically decontaminated during the thermal self-disinfection.

Channels treatment and monitoring

- The channels treatment is guaranteed by a dedicated pump, a flow sensor and a pressure transducer for the water circulation control.
- Endoscope channels flow and pressure are monitored during the whole cycle.
- Automatic stop of the cycle in case of alarm and automatic rinse (single or double) to remove chemical product residuals, when needed.

Channels purging/drying system

- Endoscope channels are purged through 0.2 µm filtered compressed air (built-in air compressor).
- Alternatively, the machine can also be directly connected to external medical grade quality compressed air (air compressor not available).
- An additional setup for the connection to external medical grade quality compressed air is available as an option. In this case, built-in air compressor and connection for external compressed air are both available, but the default functioning will be with built-in air compressor.
- A forced heated air-drying system is available as an option for the elimination of residual humidity inside the washing chamber and on the external surfaces of the endoscope.

Leakage test

- The leak test verifies the instruments suitability to be treated into the AER preventing possible problems before they can cause damages.
- Leak test check is active during the whole cycle with automatic cycle stop in case of anomalies.

Washing chamber heating elements

- 2.5 kW electrical heating element in the sump of the washing chamber
- Two (2) independent temperature probes (PT 1000) in the washing chamber
- Additional PT1000 probe to check the inlet water temperature and the temperature during the heating phase.

Chemical dosing system

The correct dosing quantity is essential for trustworthy disinfection results.

- Three (3) automatic membrane dosing pumps precisely add liquid chemical agents.
- Volumetric control of the dosed chemicals by double, high-accuracy flowmeters to control and validate the disinfectant and detergent quantity.

Chemical storage

The endoscope washer EW 1 allows the storage of chemical tanks inside its frame.

- Capacity of up to four (4) tanks equipped with

protective caps to avoid any vapors emission.

- Collection tank in case of chemical leakages.
- The feeding system is equipped with low level sensors.

Drain pump

Control System

The control system allows the definition and the memorization of customized programs dedicated to the treatment of each single instrument according to the chemical products used.

- Three (3) electrical boards: one (1) master and two (2) slaves.
- Standard pre-memorized programs certified by microbiological hygienic reports carried out by certified laboratories.
- All different programs can be selected from the control panel. Cycle start is possible only after the operator recognition.

System control panel

- Soft touch control system on glass panel.
- A 3,5" graphic color LCD display constantly informs the operator about the machine status: cycle phase, time left, chamber temperature, chemical and water quantities. The system registers all the sensible parameters to print and archive them.
- At the end of the cycle, the system highlights the correct instruments reprocessing.
- Acoustic and visual alarms provide quality control for each wash cycle.
- Printer connection to monitor and validate the washing cycles.
- USB port on frontal panel for cycle data, machine parameters and washing programs download. It also allows easy firmware update.
- Optional Ethernet RJ 45 connection via gateway for supervisor SW connection.

Process traceability

The identification of each single endoscope ensures that the cycle control information is closely related to the single instrument, thus granting its complete traceability.

EW 1 prints a final report for each cycle with:

- AER serial number identification
- ID of the instruments
- ID of the operator

It also reports all the process parameters as:

- Cycle time

- Water consumption
- Chemical products dosing
- Phase details
- Events

At the end, the cycle status is pointed out (pass/fail).

Built-in printer

Built-in printer for validating washing phases with detailed information

Reprocessing cycles

EW 1 is compatible and has been validated for low temperature high level disinfection (35°C) and liquid sterilization processes.

By using Steelco chemical products, EW 1 grants instruments maximum safety conditions as well as **efficient results proven by microbiological tests** together with complete documentation.

Validated high level disinfectant

The validation has been performed by a certified European microbiological laboratory to attest the conformity to UNI EN ISO 15883-4.

Validated liquid sterilant

The validation has been performed by a certified European microbiological laboratory to attest the conformity to UNI EN ISO 14937.

Self-disinfection cycles

- The device performs the thermal self-disinfection cycle: 80°C/176°F washing phase as requested by the standard UNI EN ISO 15883-4.
- Completely automatic and programmable self-disinfection cycles.
- Self-disinfection of the hydraulic circuit and of the water filtration system.

Optional

Washing chamber forced warm air-drying system

- A forced HEPA H14 filtered air drying system ensures the drying of the external surface of the endoscopes.
- 0.75 kW electric heating element.

Extra heating elements

4 kW heating element to be used where there is only cold water available (to reduce the total cycle time without the installation of boilers).

Barcode reader

For the recognition of operators and instruments.

Stand on wheels (only for single door machine)

SteelcoData Live software

Dedicated software for the traceability of all the information of the endoscope washing cycles.

SteelcoData ARES software

Dedicated software for the monitoring of the whole endoscope reprocessing system including the use, the manual prewashing, the automatic reprocessing, the storage, the service and all the waiting times between any of these phases.

Light inside the chamber

And others, please verify with your local distributor/agent.

Accessories

- Complete range of connectors for endoscopes brands and models.
- Duodenoscope dedicated reprocessing support.
- Steelco Process Challenge Device (PCD) kit for the control of the cleaning efficacy.
- Trolleys for the transport and short time storage of contaminated and/or disinfected endoscopes and accessories.

Required utilities

For any connection detail, please refer to installation drawing of the selected model/version.

Demineralized and softened cold/mixed water

Drain connection

Electrical requirements

- The total power of the machine in the standard configuration is 3,05 kW.
- 230V 50Hz
- Other electrical connections are available to match electrical requirements of installation site.