

## EW 1

### Compact automated endoscope reprocessor



The Steelco EW 1 machine has been developed to comply to UNI EN ISO 15883:4 and EN ISO 14937 directives.

The EW 1 is capable to reprocess 1 flexible endoscope, up to 2 video bronchoscopes or up to 3/4 fiber-bronchoscopes of all types and brands and up to 11 rigid endoscopes with dedicated wash carts.

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

The integrated monitoring system assures a higher level of safety by checking flow and pressure of the instrument connection.

EW 1 endoscope reprocessor performs thermal or chemical self-disinfection.

EW 1 design provides an installation set for any facility:

- Single door
- Double door pass through

The “rack” option set-up for two EW 1 units allows asynchronous reprocessing of 2 flexible endoscopes on a small footprint

- Single door - double unit on “rack”
- Double door pass through - double unit on “rack”

#### Specifications

#### Dimensions:

##### Single door

External WxDxH:  
600mm x 630mm x 945mm  
23.62" x 24.80" x 37.20"

Chamber WxDxH:  
415mm x 480mm x 375mm  
16.33" x 18.90" x 14.76"

Door passage WxH:  
415mm x 260mm  
16.33" x 10.23"

##### Double door

External WxDxH:  
710mm x 570mm x 1206mm  
23.62" x 24.80" x 47.48"

Chamber WxDxH:  
415mm x 480mm x 375mm  
16.33" x 18.90" x 14.76"

Door passage WxH:  
415mm x 260mm  
16.33" x 10.23"

#### Water consumption:

(6 l) per chamber fill

#### Sound level:

< 40 dB standard configuration  
56.2 dB with forced air drying system

#### Cycles:

3 pre programmed, 4 user defined

#### Drying:

Complete purging of the instrument channel by a built-in 0,2µm sterile air system.  
Washing chamber and endoscope external surface warm air drying is also available as option.

### Validated liquid sterilant:

Use of the combined system **SteelcoXIDE-A + SteelcoXIDE-B + detergent SteelcoXIDE DT**, on a **validated cycle** at a concentration of 1% at 35°C.

Tests have been performed by a European certified microbiological lab HygCen for compliance to **UNI EN ISO 14937**.

### Validated liquid disinfectant:

Use of the liquid disinfectant **Neodisher SeptoPAC designed for Steelco** and of the detergent **Neodisher SC** on a **validated cycle** at a concentration of 1% at 35°C.

Tests have been performed by a European certified microbiological lab HygCen for compliance to **UNI EN ISO 15883:4**.

### Dosing:

Automatic chemical dosing via membrane pumps controlled by double flowmeters

### Standard features

#### Hinged drop down door

- Stainless steel door frame, stainless steel AISI 316L (DIN 1.4404) washing chamber sides, high visibility HST tempered full glass door.
- The door acts as a loading platform for washing carts for a convenient instrument loading and unloading job.

#### Locking Door

- Door locking system during cycle execution grants operator safety and prevents interference with washing cycle.

#### Washing system

- Two separate hydraulic circuits with dedicated pumps for endoscope channels and washing chamber
- Two rotary spray arms, one at the bottom and one at the top of the chamber
- Spray arms made of AISI 316L stainless steel (DIN 1.4404)
- Easily disassembling of washing arms for cleaning and maintenance
- The EW 1 drain system guarantees the complete emptying of the washing chamber and hydraulic circuit.

### Water connections and filtration

- One (1) water line connection available for cold/mixed or demineralized water.
- Water line is equipped with two (2) flow meters for checking and validation of water quantity and with a water filtration system (one 0.45 µm filter and one 0.1 µm filter).
- Water level sensor into the washing chamber.

### Channels treatment

- The channels treatment is guaranteed by a dedicated pump, a flow sensor and pressure transducer for the water circulation control.

### Channels purging/drying system

- Built-in sterile air system, made up of 0,2µm filter for the production of sterile air that ensures the complete purging of the instrument channels.

### Channels monitoring

#### Leakage test

- The leak test verifies the suitability of instruments to be treated into the machine preventing possible problems before they cause serious damages
- Leak test is executed during the whole wash/disinfection cycle with automatic cycle stop in case of anomalies

#### Channels check

- Endoscope channel flow and pressure monitoring during the whole cycle.
- Automatic stop of the operating cycle in case of alarm and automatic rinsing for the total removal of possible chemical product residuals.

### Circulation pumps

- 110W power pump, 90 l/min flow dedicated to endoscope channel washing
- 110W power pump, 90 l/min flow dedicated to washing chamber washing arms

### Chemical dosing

#### The correct dosing quantity is essential for trustworthy disinfection results.

- Three (3) membrane pumps provide precise addition of liquid chemical agents.
- Volumetric check of the dosed chemicals by double, high accuracy flow meters for checking and validation of disinfectant/liquid sterilant and detergent quantity.

## Chemical storage

**EW1 endoscope reprocessor is endowed with a stainless steel base for the storage of process chemicals.**

- Up to three (3) chemical tanks 5lt capacity.
- Level sensor check.

## Washing chamber heating element

- 2.6 kW electrical heating element
- Electronic thermostat
- Two (2) independent PT1000 temperature probes
- One (1) additional PT 1000 probe for the checking of inlet water temperature

## Microprocessor Control System

- Three electrical boards: master, slave and redundancy
- Possibility of memorizing up to 7 programs: 3 standard programs, 4 user definable programs
- Standard pre-memorized programs follow the chemicals used for the validation; they are developed by Steelco and 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
- 3,5" graphic colour LCD display



## System Monitoring

- Constantly informs the operator regarding machine status, cycle phase, remaining cycle time to the end of treatment and the chamber temperature.
- Audible and visual alarms provide quality control for each wash cycle.
- Integrated printer to monitor and validate all washing cycle phases

- USB port on frontal panel for historical cycle data, machine parameters and washing programs download. It allows easy firmware update.

## Disinfection/Sterilization and self-disinfection Cycles

The use of Steelco validated chemicals grants the **microbiological efficiency proven by Type Tests** carried out in compliance with relevant standards.

Disinfection (with peracetic acid) and liquid sterilization (with hydrogen peroxide) cycles can be also equipped with chemical process indicators which test the due contact and the correct concentration of chemical agents in use.



- Self-disinfection cycles:
  - Thermal at 80°C
  - Chemical at 55°C

## Process traceability

**Steelco EW 1 gives a report for each disinfection/sterilization cycle including:**

- EW 1 serial number identification
- ID of the instrument (up to 4 instruments)
- ID of the operator who activated the cycle

It also registers all parameters in process:

- Cycle time
- Water consumption
- Chemical products dosing
- Phase details

At the end it points out that the cycle has been correctly reprocessed.

## Drain Pump

- Independently operated drain pump in order to pump out waste water efficiently

## Construction

### Wash Chamber and internal door side

- Constructed using AISI 316L BA Ra<30µm (Ra<0.8µm)
- Designed and constructed with smooth edges and corners removing areas where

dirt can accumulate and allow bacterial growth.

### Exterior

- AISI 304 Scotch Brite finish Ra<40µm (Ra<1.2µm)

### Components

- Built 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 isolation

### Standard Configuration

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- 3 dosing pumps for chemicals
- 0,45 µm + 0,1 µm bacteriological filters
- Sterile air channels purging
- Drain pump
- Integrated printer
- Stainless steel base cabinet for the storage and level check of chemical products

### Optional features

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#### Double door pass-through version

#### Rack configuration

#### Stand on wheels (only for single machine)

#### Endoscopes connectors

#### Washing carts

#### Light in the camber

#### Powered electrical heating elements

- 4.0 kW electrical heating elements to reduce total cycle time in case of connection with cold water only
- AER total power 4.5 kW

#### External Water Softener

- Softens incoming water

- Programmable regeneration with low salt alarm

#### Connection for external compressed air medical quality

- Max inlet pressure 2 bar

#### Washing chamber warm air drying system

- forced HEPA H14 filtered warm air drying ensures perfect drying of the external surface of the endoscopes
- 0.75 kW electric heating element

#### Barcode reader

- allows faster instrument and operator recognition

#### Ethernet connection

- Connection for:
  - Registration of cycle data on a remote server through SteelcoData traceability software.
  - Compatibility with traceability system of endoscopes SteelcoData ARES

#### Accessories

- A variety of basket trays for flexible endoscopes, videobronchoscopes/cystoscopes, fiberscopes/cystoscopes, rigid scopes...
- Using the "rack" option, two EW 1 machines will be installed on the top of each other. This set up allows asynchronous reprocessing of 2 flexible endoscopes on a small footprint. The two EW1 units share the same chemicals cabinet

#### Cleaning chemicals

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- Dedicated and validated cleaning chemicals are available.

#### Required utilities

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For connection details please refer to installation drawing of the selected model/version.

#### Connection to process water 1 (afterwards filtered in the machine)

#### Connection to water 2

(for pre-washing phase - deactivable)

### Electrical requirements

- Total power of the machine in standard configuration 3.05 kW
- 230V/~150Hz
- other electrical connections are available to match electrical requirements of installation site.