

# STEAM STERILIZER SERIE S1000 (RBE)

## INTRODUCTION:

Of Turkish manufacturing, our sterilizers Series **S1000 (RBE)** are designed for the purpose of inactivating and sterilizing infectious waste generated in hospitals making them sterile and therefore similar to ordinary urban waste.

According to the World Health Organization, steam sterilization should be the prime option and preferred method for the treatment of infectious waste. For complete safety of the sterilization process, this must be done in autoclaves having fractional vacuum and post treatment of all fluids and liquids exhausted from the chamber before flowing them to sewer.

We offer all of these features and benefits in the Series **S1000 (RBE)** simplifying user handling by means of an ergonomic touch screen, dual PLC and industrial microcomputer, high production capacity, pneumatic and vertical sliding doors, low noise, etc.



## MODELS:

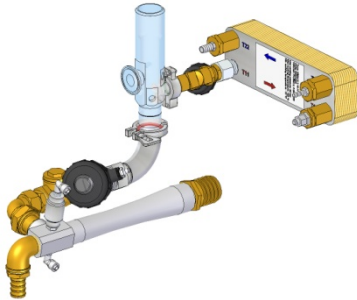
Series **S1000 (RBE)** consists of 16 models with 4 different sizes of chamber, with single (1) or double (2) door, with integrated steam generator (E) or network fed steam (V):

Code	Model	Overall dimensions (mm)	Chamber Dimensions (mm)	Chamber Volume (L)	Power (kW)
78328.9	1006 VR-1	996x1954x1314	670x670x998	445	3
78329.9	1006 ER-1	996x1954x1314	670x670x998	445	51
78330.9	1006 VR-2	996x1954x1336	670x670x996	445	3
78331.9	1006 ER-2	996x1954x1336	670x670x996	445	51
78332.9	1008 VR-1	996x1954x1614	670x670x1265	565	4
78333.9	1008 ER-1	996x1954x1614	670x670x1265	565	64
78334.9	1008 VR-2	996x1954x1636	670x670x1296	578	4
78335.9	1008 ER-2	996x1954x1636	670x670x1296	578	64
78336.9	1010 VR-1	996x1954x2054	670x670x1735	774	4
78337.9	1010 ER-1	996x1954x2054	670x670x1735	774	64
78338.9	1010 VR-2	996x1954x2076	670x670x1733	773	4
78339.9	1010 ER-2	996x1954x2076	670x670x1733	773	64
78340.9	1012 VR-1	996x1954x2316	670x670x2000	893	5
78341.9	1012 ER-1	996x1954x2316	670x670x2000	893	65
78342.9	1012 VR-2	996x1954x2338	670x670x1998	892	5
78343.9	1012 ER-2	996x1954x2338	670x670x1998	892	65

## KEY FEATURES:

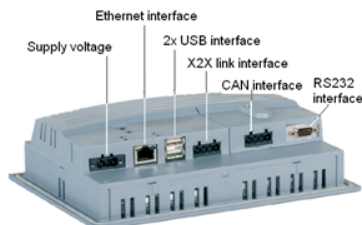
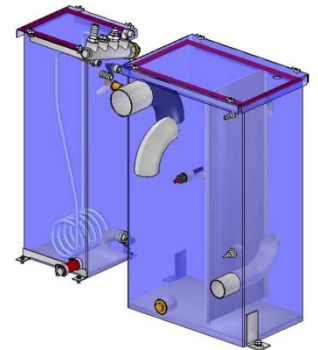
The new generation of our sterilizer Serie **S1000 (RBE)** is designed with full compliance of European Standard EN 285: 2006 including the latest recommendations for safety and efficacy, guaranteeing perfect control of the whole sterilization processes:

- Continuous Chamber and continuous Jacket made of stainless steel 1.4404 EN 10028-7 (AISI 316L) - Continuous jacket around the chamber guarantees the absence of "cold spots" in the chamber.
- Front panel made of stainless steel.
- Pipes conducting steam are made of stainless steel, with tight seal Clamp system, easy/quick disassemble.
- Pneumatic driven door(s), vertical sliding with safety lock.
- Smooth housing of door gasket ensuring maximum durability and easy maintenance.



- Vacuum system by means of ejector (Venturi system) with recirculation pump and water economizer set, effective, silent operation and low maintenance. Optionally, at no extra cost, liquid ring vacuum pump is installed in replacement of Venturi system.
- Heat exchanger to condensate vapors recovered from the chamber in order to speed vacuum production.

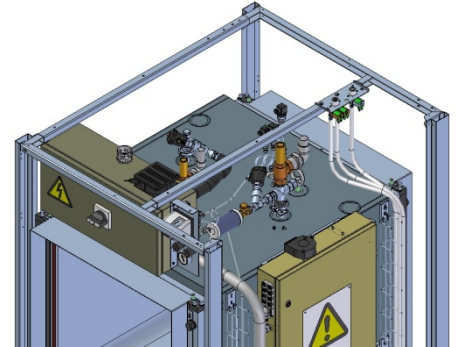
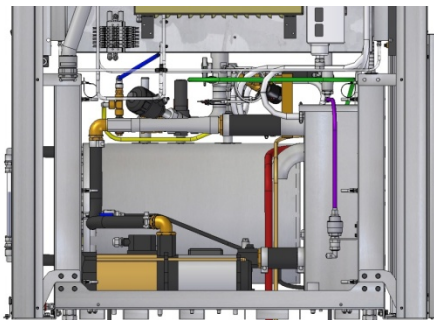
- Independent water tank equipped with heat recovery coil from condensates, which heats up the water intended for steam production leading to energy savings. Additionally non-condensable gases are expelled off this water (according to EN 285).
- Independent process monitoring and recording by industrial microcomputer with built-in touch screen and PLC, easy handling.



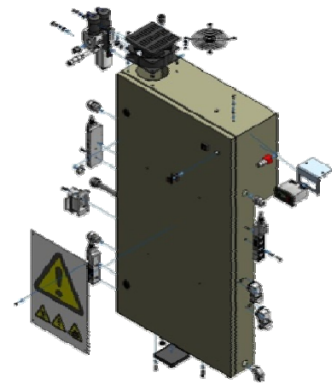
- High visibility backlit board on the frontal with operating symbols to indicate process status such as warnings and alarms, supplies fault, do not use; machine is in maintenance and repairing, etc.,... This will allow the user to know the status of the machine quickly and intuitively.
- Pressure gauges on the front panel (chamber and steam generator) in NSS and chamber SS.



- Improved accessibility to the various components of the sterilizer for technical servicing.



- Access ports for introducing validation probes for pressure and temperature.
- Electrical panel with passive distribution systems for connecting sensors and actuators. Simplified wiring system to reduce maintenance time and costs.



### STEAM GENERATOR:

Sterilizers models 1006 ER-1/2 ,1008 ER-1/2, 1010 ER-1/2 and 1012 ER-1/2 incorporate a steam generator made of stainless steel with the appropriate volume. Pressure and supplies are electronically controlled in real-time. Steam is produced by means of 3 high quality electric heaters with 3 thermostats, a triple-floaters for water level control and certified and tarred safety valve.



Steam generator has an integrated energy and water economizer system fully controlled by the CPU in order to produce only the amount of steam needed for the running program. The economizer is tuned to minimize the consumption of treated water and electric power by delivering no more than the required amounts.



## MATERIALES:

Element	Type, Built Material
Chamber	Stainless steel 1.4404 EN 10028-7* (AISI 316L)
Jacket	Stainless steel 1.4404 EN 10028-7* (AISI 316L)
Doors	Stainless steel 1.4404 EN 10028-7* (AISI 316L)
Steam Generator (if applicable)	Stainless steel 1.4404 EN 10028-7* (AISI 316L)

\* According to EN 10028-7: "Stainless steel flat products for pressure. Part 7: Stainless steels"

## CONTROL AND RECORD SYSTEM:

The sterilizer is controlled by a high quality TFT color touch screen with a wider viewing angle, a built-in CPU operating in conjunction with an industrial PLC and input/output modules for analog and digital signals.

Communications and process evolving are handled by the user through the touch screen to perform the following actions:

- Access to program selection menus, maintenance and statistics, etc.
- Door opening/closing, status and position, etc.
- Displays data and useful information of running program (running phase, time, temperatures, pressures...)
- Technical Staff access to manage cycle profiles (cycle parameterization)
- Displays warnings/alarms, errors of mishandling, reset cycle, etc.
- Displays graphics and curves of the process (pressures and temperatures, etc.) in real time
- Managing users and passwords, etc.



Our sterilizers **S1000 (RBE)** are equipped as standard with an alphanumeric digital printer located in the loading area for a detailed record of the sterilization process.

Besides the parameters of pressure, temperature and time, it provides further relevant data as cycle number, lot number, date, duration of the cycle, notices, etc.

The printer has a storage capacity of paper to print up to 40 cycles.

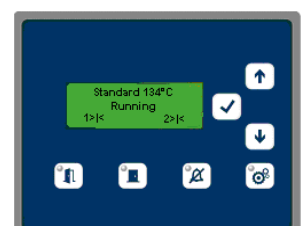
Through the USB port it is possible to download the historical data of run cycles. The history can also be downloaded through Ethernet port to a PC or to external printer for printing on A4 format.

Additionally, the screen is ready for connection to external PC systems (EasyLook software, external traceability systems, remote access, etc.) as well as from the internet through its Ethernet port.



Given its large internal memory, process data of up to 1000 cycles can be stored (data of last 20 cycles are stored each second for later diagnose and redrawing of analog curves on PC or printer).

For sterilizers having two doors, an additional LCD screen with a resolution of 4 x 20 characters is installed on the unloading side with push buttons to perform basic operations like opening the door at the end of the cycle and sometimes to launch a cycle and many others.



### **PROGRAMAS:**

The microcomputer, with standard programming, has a number of programmed cycles covering a wide range of sterilization processes. Optionally, and on demand, other sterilization and/or disinfection cycles, for special processing requirements, can be parameterized and incorporated.

<b>PROGRAM</b>	<b>DESCRIPTION</b>
T1	VACUUM TEST
Test	BOWIE & DICK TEST
Program 1	BIOCONTAMINATED WASTES 134°C

Optionally, and on demand also, the sterilizer can incorporate operation automations such as "Program Auto-Start" for Vacuum Test launching at the beginning of the day, simply by establishing date and time for the cycle to perform.

### **RBE SAFETY APPLIANCE:**

One of the most important characteristics of RBE sterilizers is sterilization of all fluids (liquids and gases) originated in the chamber during pre-vacuums at the beginning of the process, when sterilization phase has not been yet performed. These fluids may contain contaminating microorganisms. Therefore, special measures should be taken to sterilize them before leaving the sterilizer.



During pre-vacuums, air and other gases are extracted from the chamber through an L3 HEPA filter of 0.02 microns preventing contaminating surrounding atmosphere. The L3 filter itself is sterilized during the heating phase to prevent recontamination.

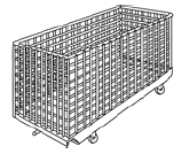
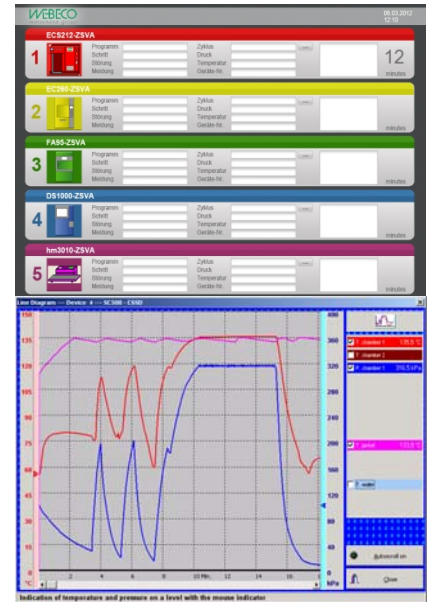
Our **S1000 (RBE)** sterilizers incorporate a proper system intended to avoid obstruction (saturation) of the L3 filter during sterilization process resulting in cycle span optimization. An alarm is thrown in case of filter obstruction. The filter is easily replaceable by the user when scheduled to.

Moreover, if the sterilization phase is not correctly completed, the condensates remain in the bottom of the chamber and are sterilized by steam injections through a valve located at the bottom. This procedure allows sterilization of all liquids and condensates as well as the inner side of the pipelines that have had contact with the contaminated product.

Our **S1000 (RBE)** sterilizers are equipped with a safety setup, thus in case of process failure, the condensates as well as all other fluids remain hermetically retained inside the chamber..

## OPTIONS AND ACCESSORIES:

- Process and data monitoring with EasyLook software from us (cycle performance monitoring, running conditions, data logging, reports, etc.)
- Video Recorder
- Power Saving Function (Auto Off)
- By-pass intake for external steam supply
- Built-in air compressor
- Uninterruptible power supply with UPS
- Tighten areas and independent door sealing gaskets
- Left side maintenance access
- Special voltages and frequencies
- Liquid ring vacuum pump rather than VENTURI system
- Remote Alarm
- Loading system (carts, racks, platforms, shelves ...)
- Paneling (sides panels, lintels, maintenance door...)
- Water treatment systems (softener, reverse-osmosis...)



## REGULATIONS COMPLIANCE:

Our **S1000 (RBE)** sterilizers comply with the most recent regulations in the European Community. The sterilizers have been designed according to the European standard EN13445:2002 and are marked with the number CE0053, the corresponding number notified by ATISAE Organism.

Main regulations to this regard are:

- Pressure Equipment Directive 97/23/EC
- Machine Security Directive 98/37/CE
- Electromagnetic Compatibility (EMC) Directive 92/31/EEC
- Low Voltage Directive (LVD) 1973/23/EEC