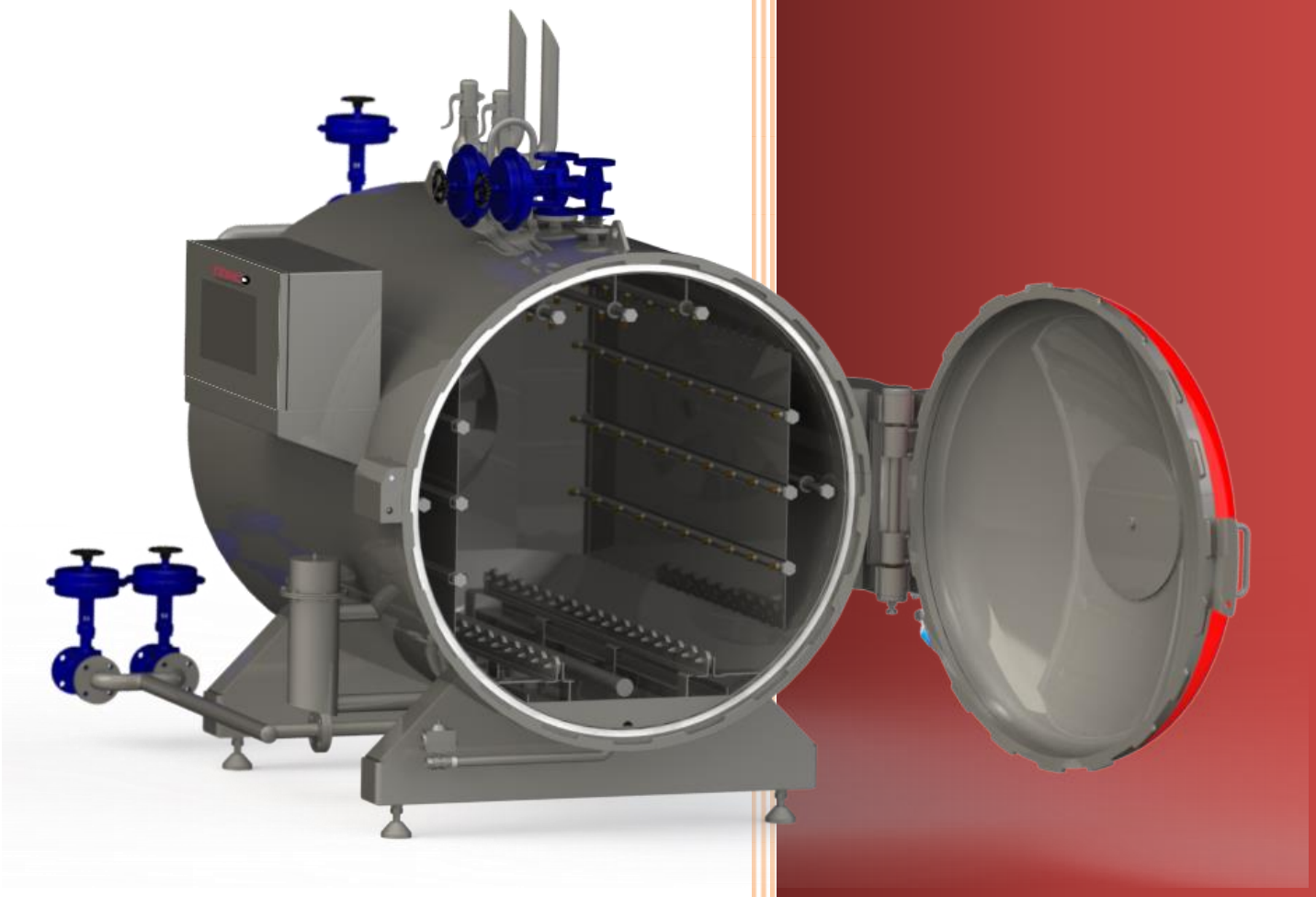
2018

CATALOGUE

STERIBRU STEAM-AIRE RETORT



Steribru Autoclaves

1. STERIBRU ® RETORT

1.1. INTRODUCTION

The food industry is under great pressure to offer consumers food with the highest level of quality and safety, because the inherent properties of food also make it a microbiologically perishable product. For this reason, the Food Industry needs to apply technological barriers that guarantee the conservation and prolong the useful life of food.

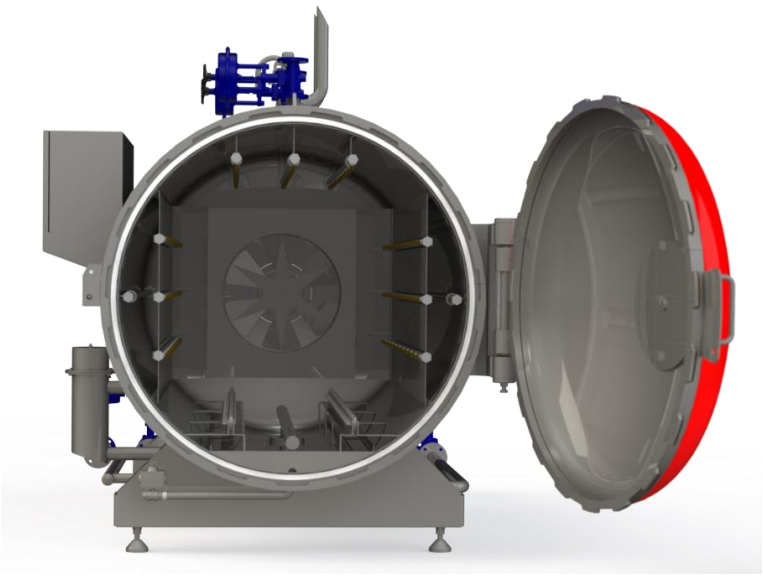
One of the most effective methods for the conservation of perishable food is sterilization by direct application of moist heat, which is done on food packed in hermetically sealed containers. This method eliminates the pathogenic microorganisms that are dangerous for the consumer; It also eliminates those that alter the food in storage and distribution conditions.

We must appropriately control the thermal treatments in order to exceed the lethality limits of the pathogenic microorganisms. This will ensure the food safety and its commercial sterility. This is possible by applying a risk management system, based on the methodology of hazard analysis and critical control points; according to article 5 of Regulation 852/2004 on the hygiene of food products (L 226/3 - 06/25/2004).

Therefore, it is important to highlight the enormous importance of having the right equipment and the right conditions to achieve the perfect execution, reproducibility and control of thermal processes. Steribru stands out for its excellence in the control and reproduction of thermal processes, while maintaining the perfect balance between these factors. Our designs are the result of more than 25 years of experience in the automation, validation and instrumentation of retorts.

1.2. STEAM-AIR STERILIZATION SYSTEM

This system consists on supplying direct steam inside the retort and it uses a fan to homogenize the mixture of steam and air. This way the formation of air pockets is prevented, achieving equal heat transmission throughout the retort.
This system is suitable for all types of containers (metal, glass, etc.).



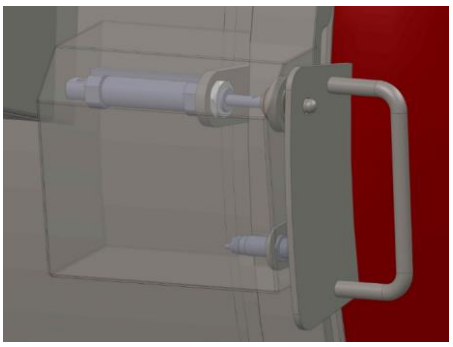
1.3. FEATURES.

- Retort models: STB1300VE, STB1400VE, STB1500VE.
- Diameters:
  - STB1300VE: 1.280mm
  - STB1400VE: 1.400mm
  - STB1500VE: 1.500mm
- Useful length: 1000mm to 10000mm
- Number of doors: 1 or 2
- Basket external dimensions: (width x height x length).
  - STB1300VE: 850X800X990mm
  - STB1400VE: 820X820X820mm
  - STB1500VE: 990X990X990mm

  (Or similar dimensions).
- Capacity: 1 to 10 baskets
- Entirely built in stainless steel AISI 304 or AISI 316.
- Wall thickness of the cylindrical shell: 6 mm
- Insulated with fiberglass and coated with stainless steel.
- Automatic closing by pneumatic cylinder, actuated by a push button located near the door.
- Optional incorporation of mechanical traction for baskets.
- 1500 rpm fan for air recirculation.
- Approved equipment with EC marking, according to pressure equipment directive.
- Production according to the AD-MERKBLATTER design code, in equivalence to ASME Code.
- Maximum working pressure: 3 bar
- Maximum allowable temperature: 140ºC

1.4. SAFETIES.

1.4.1. **Safety gate**: A pneumatically locking system locks the door automatically when there are unsafe conditions of temperature, pressure, water level and process run. This way, the normal opening of the door by the pneumatic cylinder is disabled under these conditions.



1.4.2. **Overpressure safety valves:** The retort has a safety valve installed to ensure the discharge of pressure in case of system failure.

1.4.3. **Vacuum safety valve:** The retort has an installed valve to avoid negative pressures inside the machine.

1.4.4. **Electrical failure:** The automatic controller memorizes the phase and remaining time of the process in case of power failure. The electrical restoration will maintain the position prior to the incident, but in a stop condition. Furthermore, during the loss of tension the valves installed in the retort will be positioned to ensure safe conditions during the course of the incident.

1.5. VALVES

The valves of Automatismos Teinco, S.L installed in their **Steribru®** retorts ensure proper regulation and control of the fluids involved in the process.

1.6. INSTRUMENTATION

All instrumentation installed in the Steribru® retorts is in accordance with the regulations 21 CFR parts 11 and 113 of the FDA.

- Digital thermometer.
- Analog gauge.
- Circular template recorder for temperature and pressure.
- Automatic water level control.
- SCADA system with connection and PC control.
- Product probe to control the temperature of the product with its lethality calculation (Fo).

1.7. CONTROL PANEL

The automatic control system included in the Steribru retort is optimized for driving thermal processes. With an accuracy of indication: ± 0.1ºC / ± 0.05 bar and regulation: ± 0.2 ° C.

The control panel, in addition to a PLC and an Integrated Display Computer, can incorporate a temperature / pressure recorder and a synoptic of real-time operation for an easy identification of the functional state of the system and all its components.

The purpose of the control panel through the programmer will be:

- Automatic process control
- Manual control of the different components of the system.
- Alarms control due to process deviation.
- Recording of variables involved in sterilization.
- Recipe scheduling.
- Selection of working mode system.
- Configuration and adjustment of variables.

The control panel can be mounted in the retort itself or centralized in a control room together with other panels. In addition, the programmer optionally allows the centralization of different equipment through a SCADA system designed for proper control in real time, monitoring and recording of process variables.

1.7.1. PROGRAMMER

The programmers used in Steribru retorts ensure complete control of the sterilization process with simple and intuitive operation.

Specially programmed for thermal processes in retorts, they have different tools and alarms for automatic action to control the process time from certain deviations or incidents that could lead to an alteration in the normal treatment temperature.

Easy programming of new recipes or modification of existing ones. They include access control through password programming and configuration with different user levels and access privileges.

Automatic control of the entire thermal cycle. They also integrate the option of manual execution of the different components of the system, accessing "manual execution" through password control.

1.7.1.1. Allen-Bradley programmer

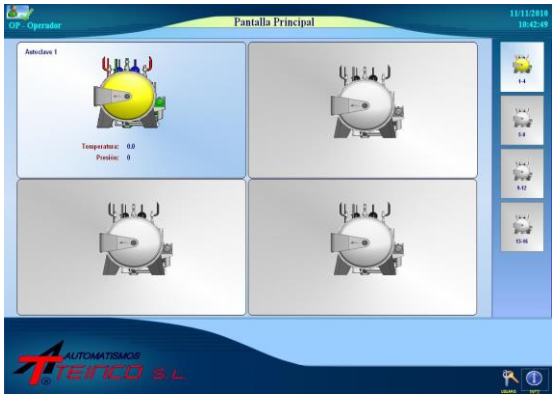
The Allen-Bradley CompactLogix programmer together with an industrial PC of 19" touch screen has the following main characteristics:

- Five variables controlled simultaneously and calculation of F0-P0.
- Unlimited program library.
- Process synoptic.
- Two programmable analog modulation outputs.
- Digital registration and monitoring of process signals.
- Interactive graphics.
- Registration and monitoring software valid for the F.D.A.
- It complies with the regulations FDA C.F.R. 21 Part 11.
- Adaptable to other automated regulation processes.
- Valid for any sterilization system.

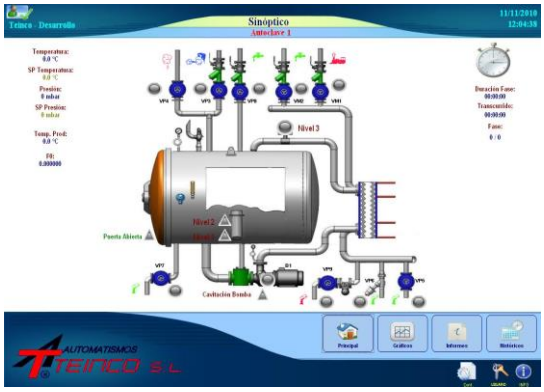
1.8. SCADA SUPERVISION SYSTEM (STERIBRUSOFT)

The SCADA supervision system SteribruSoft allows:

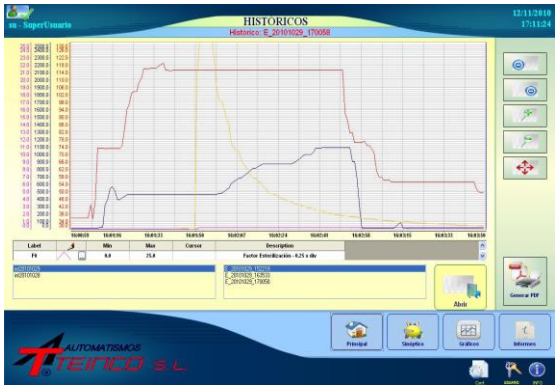
- Real-time process data visualization
- Storage of process data
- Printing reports in PDF format
- Exporting data to CSV files
- Registration and management of active and historical alarms
- Event registration.
- Registration and control of users.
- Compliance with the regulations FDA C.F.R. 21 Part 11.



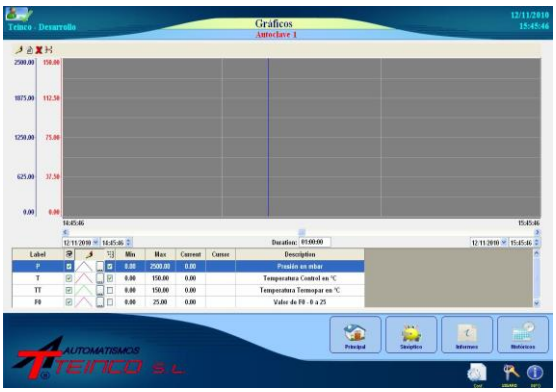
RETORT SELECTION SCREEN
Simultaneous monitoring equipment.



RETORT MONITORING SCREEN
Display of control elements.



RETORT GRAPHICS
Real-time visualization.



REPORT MANAGEMENT
Display of registered graphics.

2. LOADING SYSTEM

2.1. BASKET AND TROLLEY

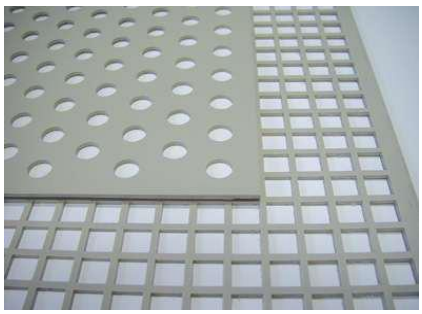
Used for rigid containers such as tin and aluminum.

Features:

- External dimensions: (width x height x length).
  - STB1300D: 850X800X990mm
  - STB1400D: 920X920X920mm
  - STB1500D: 990X990X990mm

  (Or similar dimensions).
- Sides formed with electro-welded rod. Maximum open area to ensure a good temperature distribution.
- Reinforced ends and bottom with angular profile.
- Manufactured entirely in stainless steel.
- Fixed or mobile background for use with a palletizer.
- Baskets incorporate guides.
- Trolley incorporate wheels.

2.2. CAN SEPARATOR

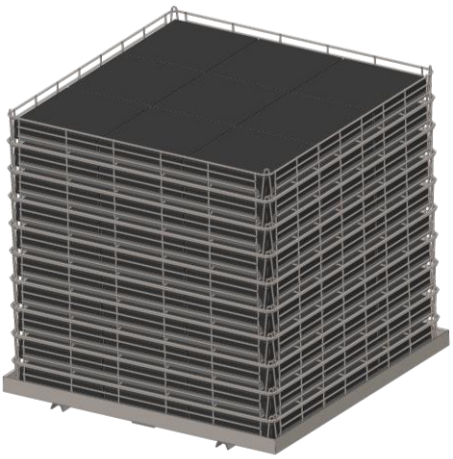


Can separators with custom dimensions and internal holes strategically distributed.

Teinco offers a new material of high performance, specially formulated for the processes of food sterilization using retorts.

The combination of high temperature, pressure and steam requires a specific quality for perforated separators. With approval of FDA regulations for contact with food.

2.3. SELF-STACKING TRAYS



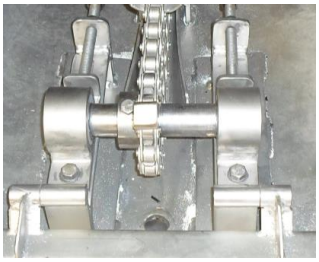
Use for rigid containers such as tin and aluminum. Suitable for easy-peel and pouch.

Features:

- Trays external dimensions: (width x length).
  - STB1300D: 794x934 mm
  - STB1400D: 864x864 mm
  - STB1500D: 934x934 mm

  (Or similar dimensions).
- Height: Configurable according to cans.
- Manufactured with electro-welded rod. Maximum open area to ensure a good temperature distribution.
- Manufactured totally in stainless steel.

2.4. LOADING, UNLOADING AND DRAG SYSTEM.



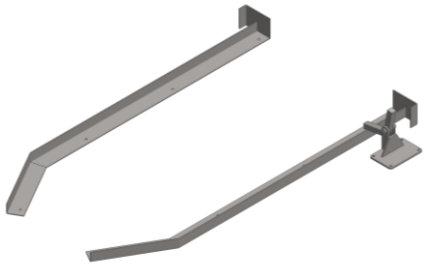
For baskets, loading and unloading system uses stainless steel wheels, placed along the retort for its displacement.
For trolleys, loading and unloading system uses stainless steel guides, placed along the retort.

In addition, the retort may incorporate a motorized drag system, consisting of a central chain with pushers and driven by an electric motor.

2.5. BASKET CARRIER

The basket carriers are used to handle the baskets outside the retort.
It is manufactured in stainless steel.

2.6. GUIDES



The guides will be used to facilitate the entry of the baskets inside the retort.
It is manufactured in stainless steel.

Note; The images that appear in this document are indicative. Automatismos Teinco S.L reserves the right to make modifications to the final design of the machines without affecting the capacity or technical characteristics specified.