

BARRIQUAND
stériflow[®]

STERILIZERS FOR PHARMACEUTICAL PRODUCTS



***STERILISATEURS POUR
PRODUITS PHARMACEUTIQUES***

***ESTERILIZADORES POR
PRODUCTOS FARMACEUTICO***

***STERILISATOR FÜR
PHARMAZEUTISCHE PRODUKTE***

COMPANY PROFILE

BARRIQUAND STERIFLOW is a company entirely dedicated to the design and the manufacturing of sterilizers for the worldwide market.

In 1974, BARRIQUAND STERIFLOW introduces the **STERIFLOW**, the first sterilizer to operate with superheated cascading water system (also called shower system).

In 1985, BARRIQUAND STERIFLOW manufactures its first vacuum steam sterilizer

In 1987, the company introduces the rotary STERIFLOW

In 1996, BARRIQUAND STERIFLOW is certified ISO 9001.

Till now, nearly 2000 **STERIFLOW** have been delivered in 90 countries by the 90 employees who form the staff of our company

The **engineering department** is composed of 15 engineers designing and developing the various units, depending on the specifications of each customer. The department has a network of workstations with state of the art CAD software.

A **manufacturing shop** dedicated to stainless steel construction.

A team of highly skilled workers using state of the art computerized machine tools ensures the construction of approximately a hundred sterilizers each year.

A laboratory for Research , Development and Training

The laboratory has pilot static and rotary sterilizers of various capacities at customer's disposal for confidential tests, operator training...



QUALITY STANDARDS

Quality Management System

The sterilizers are designed and manufactured under the **ISO 9001** Quality Insurance System and **GMP/FDA guidelines**.

BARRIQUAND STERIFLOW is ISO 9001 certified by TÜV under registration number 71 100 6047

The sterilizers are designed, manufactured and tested in accordance with :

- current European Pharmacopeia
- 89/393/CE Standard for Machinery
- 73/23/CE Standard for Electrical Safety
- 89/336/CE Standard for Electromagnetic compatibility

The autoclaves are accepted by the EU Authorities for Health and Safety and by the **FDA** Authorities (ref FDA document lacfpt224, 236 and 238).

Tracability during all the manufacturing steps are guaranteed by our **Quality Control** Department under ISO 9001.

Services as Factory Acceptance Tests (FAT), Site Acceptance Tests (SAT) and **Validation** are available on request.



TECHNICAL SOLUTIONS

STERIFLOW: a universal, economical, and high quality operating cycle.

We invented, patented the **STERIFLOW** superheated water shower system. We have never stopped developing and improving it ever since.

A low quantity of water (process water) stored in the bottom of the chamber is pumped through a welded plate heat exchanger **Platulaire**® where it is taken to programmed temperature and then showered through a water distributor at very **high flow rate**. The circuit is totally closed.

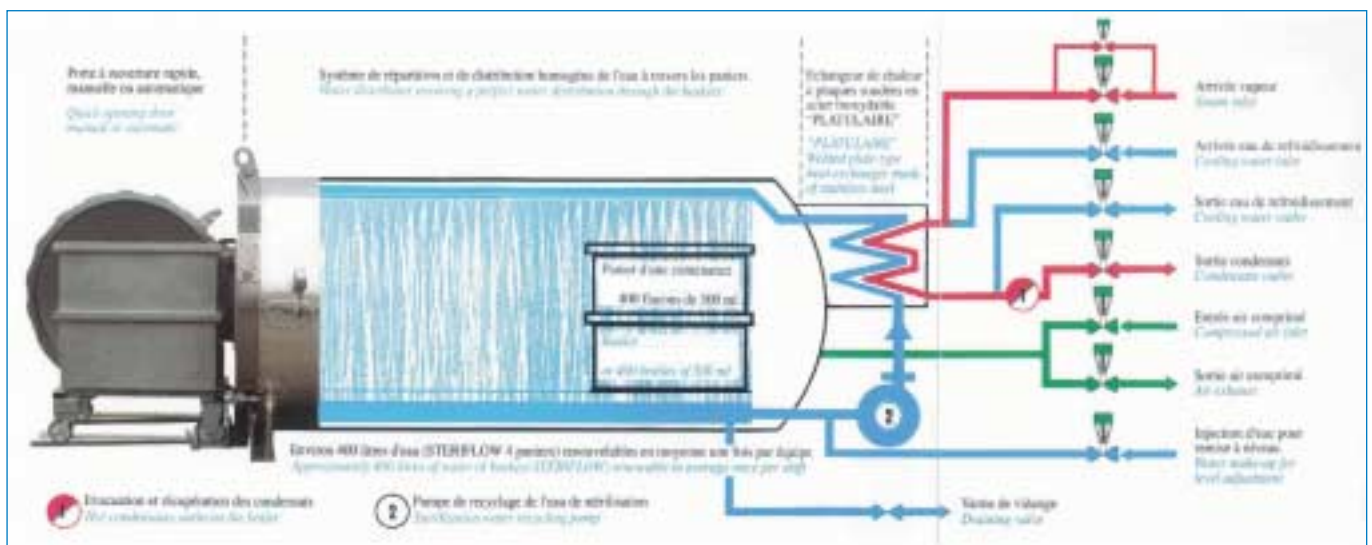
Steam is used through the heat exchanger to heat this water during the heating phase.

Cooling water is used through the heat exchanger to cool this water during the cooling phase.

The flow rate of recycled water is always the same and does not depend on the network.

The **overpressure** inside the autoclave is independantly controlled by compressed air injection/exhaust.

The whole process is permanently controlled and recorded by a process controller **MPI**, specially developed by our company for monitoring and controlling sterilization process.



TECHNICAL SOLUTIONS

MAIN ADVANTAGES

Highly efficient **homogeneity** of temperature thanks to the very high flow rate of water. Perfect reproduction of the programmed cycles, total control of the counterpressure until the end of the cycle

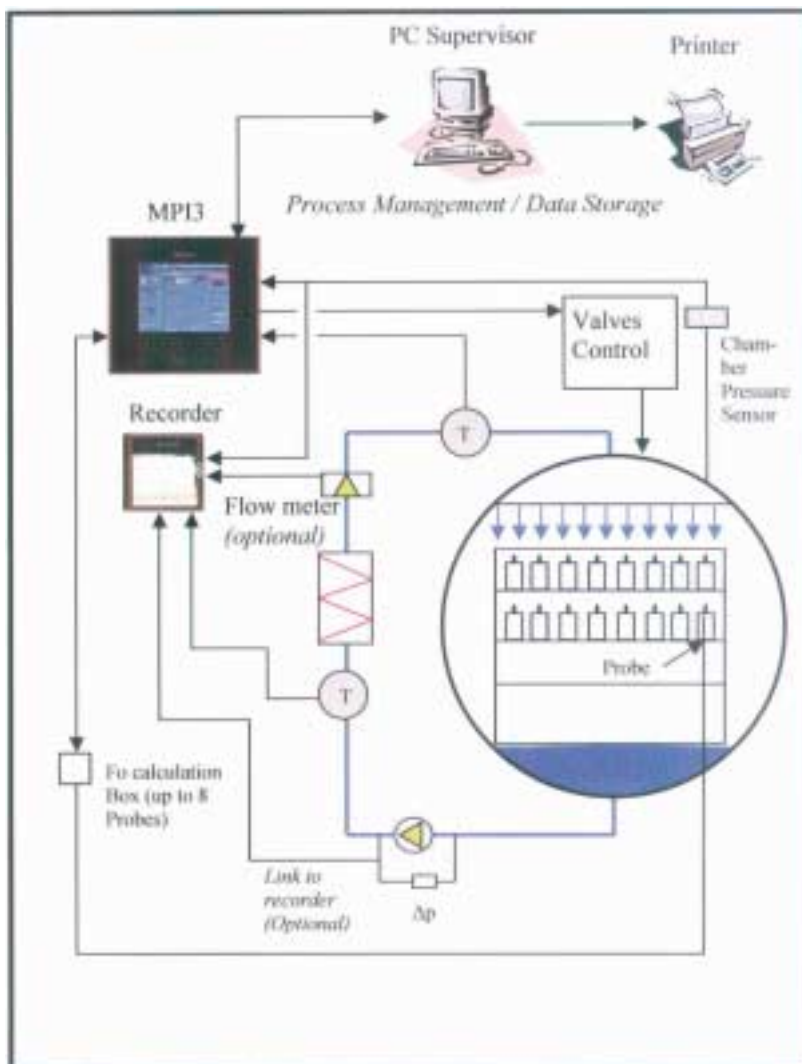
Optimum **thermal exchange**, during heating and cooling which allows a real optimization of the duration of the cycles and a high productivity of the equipment.

Simplicity of operation, minimum maintenance costs (one mechanical unit, the pump, no gaskets on the heat exchanger, international parts...)

Maximum of **safety**: cooling with sterilized water, control by Fo upon request, restricted access to computer controls...

Energy and water recovery system

PROCESS MANAGEMENT SYSTEM



MPI3



- 1 PC-based technology
- 2 Strengthened hardware
- 3 Industrial input / output device
- 4 Operating system QNX
- 5 TFT color-screen
- 6 Restricted access

Recorder

- 1 Recorder 3 or 6 channels
- 2 Fo calculation possible
- 3 Paper or paperless

Flow control

- 1 Electromagnetic flowmeter to control water flow
- 2 Alarm in case of deviation with digital display on the control panel

TECHNICAL SOLUTIONS

We offer a complete range of products to meet all customers' needs.

STERIFLOW is offered in various models :

- Static sterilizers diameter **1300 mm** with a capacity from 1 to 11 baskets
- Static sterilizers with a wider diameter (**from 1450 to 2300 mm**) for wide capacities
- Rotary sterilizers diameter 1300 mm, 1600 mm, and 1800 mm with a capacity from 1 to 5 baskets
- Sterilizers diameter 900 mm (MICROFLOW), static or rotary and **multiprocess** for laboratories and research centers
- Different types of basket adapted to all packages

All the static **STERIFLOW** are available with double-door option, allowing a better separation of products before and after sterilization.



TECHNICAL SOLUTIONS



AIR / STEAM STERILIZER “MONOFAN” TYPE

Some products require a sterilization with air/steam mixture.

The MONOFAN is adapted to those products.

Technical characteristics:

- Pre-heating through internal exchangers
- **Fan** with two speeds
- Ramp for direct **steam injection**
- Cooling through external heat exchanger and cold **water spraying** for sealed containers
- Air cooling through internal heat exchangers for unsealed items
- Temperature and pressure automatically controlled

Available with one or two doors

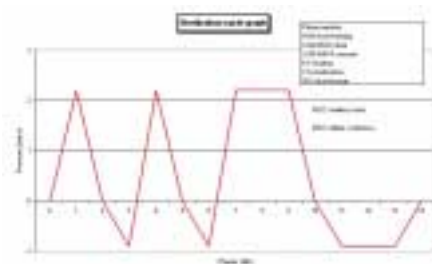
VACUUM STEAM STERILIZER

This autoclave is adapted to the sterilization of products where a minimum of humidity is required (parts of machine, open containers, chirurgical tools, culture medium,...)

In the beginning of the cycle, a vacuum venting is done.

The sterilization is performed through direct steam injection in the vessel.

A quick and final cooling/drying is done by an internal heat exchanger.



TECHNICAL SOLUTIONS



Handling Systems

When there is a need to sterilize heavy loads, or a large number of loads, the manual loading, unloading, and handling of the baskets becomes difficult or impossible.

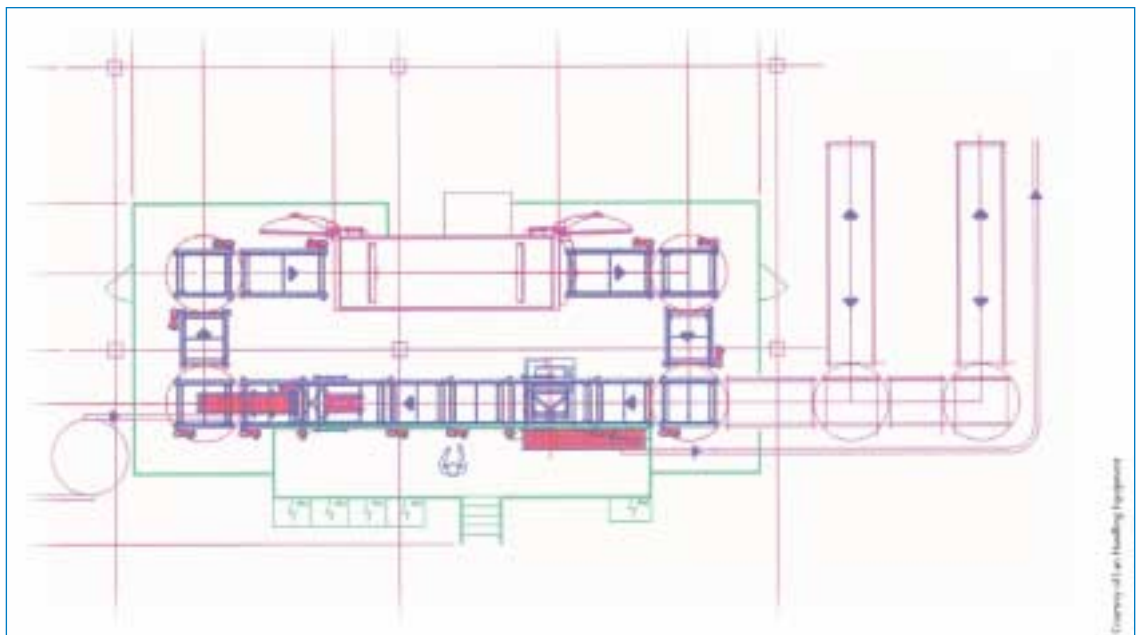
We offer a complete range of solutions, from semi-manual handling to **fully automatic** system



It includes :

- basket loaders for various containers (glass or plastic bottles, bags)
- basket unloaders
- tray stacker/unstacker
- Shuttle for automatic chamber loading/unloading

Handling equipment for semi-automatic line →



TECHNICAL SOLUTIONS

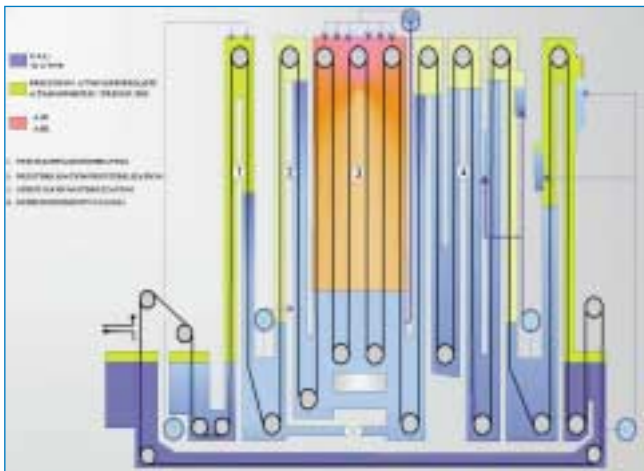
HYDROSTATIC TOWER ATM

Our range of models is completed by the **ATM Hydrostatic sterilizer**, the continuous tower sterilization. With the ATM tower, model hydrostatic without overpressure, or model pneumo-hydrostatic with overpressure, BARRIQUAND STERIFLOW offers a high capacity continuous thermal sterilization and cooling for packaged pharmaceutical products in a large variety of containers (glass bottles, plastic bottles...).

The sterilization can be processed at temperature up to 130°C and at an output of 100 to 1200 packages per minute.

The traditional and simple design of the ATM benefits from new improvements :

- progressive heating and cooling with full counter-current and calorie recollector
- smooth and directly balanced processing columns
- pressurized sterilization with water streaming, hydrostatic pressure and temperature adjustment
- modern computer controlled monitoring
- EC standard



Operation of Hydrostatic ATM

Loading station



SERVICES

We provide a complete range of **services**, dedicated to sterilization systems:

Engineering Services. Energy studies, development of customized solutions...

Maintenance services. 3 levels are accessible to our customers

- studies
- spare parts supply
- site services

Tests and developments:

We have our own laboratory, equipped with different kinds of sterilizers and analysis instruments. This laboratory is accessible to our customers.

We have sterilizers available under **rental** agreements, for site development and tests.



Commissioning and training

Beside the Head Office in France, BARRIQUAND STERIFLOW has developed and continue to develop a number of Service Centers (service engineers, spare-part supply, test equipment):

- Great Britain, Belgium, Netherlands, Germany
- Morocco
- Australia
- Brazil
- Thailand, South Korea, Japan

Validation:

“Documented procedure to obtain, record and interpret the results required to establish that a process will consistently comply with predetermined specifications” (EC-Guidelines)

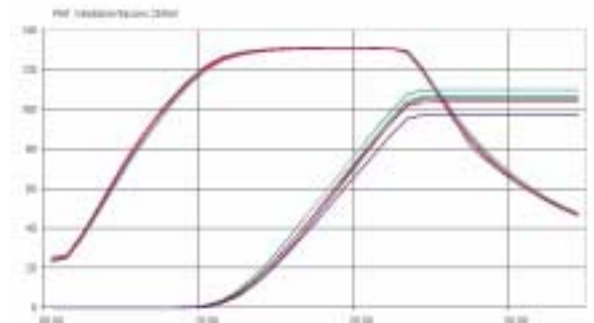
Our service engineers are equipped with the equipments allowing the process validation and the calibration of the instrument.

Validation can include

- Pre-qualification in our factory
- Installation qualification (IQ)
- Calibration
- Operational Qualification (OQ)
- Performance Qualifaction (PQ)



Courtesy of Elab Inc.



AMONG OUR CUSTOMERS

We supplied sterilizers to these companies:

- **Astra Zeneca Production** (France)
- **Bela Pharm** (Germany)
- **Cooper** (France)
- **Steripak** (U.K)
- **Labesfal** (Portugal)
- **Bioluz** (France)
- **Biosel** (Turkey)
- **Boehringer** (USA)
- **Septodont** (France)
- **Novocol** (Canada)
- **Laboratorio Behrens** (Venezuela)
- **Laboratoires Aguetant** (France)



- **Otsuka** (Japan, Thailand, China)
- **Biomerieux** (France)
- **Fresenius** (South Korea)
- **I-see vision** (Taiwan)
- **Laprophan** (Morocco)
- **Choongwae** (South Korea)
- **B Braun** (France, Malaysia)
- **Krasfarma** (Russia)
- **Sipp** (Cameroon)
- **Guangdong Shenzhou** (China)
- **Sichuan Medco** (China)



Steriflow diameter 1300mm for IV solutions in plastic bags



Steriflow diameter 1800mm,
5 baskets for injectable solution in PVC bags



Multiprocess for intra-ocular syringes

How to contact us:

Sales Office:

BARRIQUAND STERIFLOW
32 rue de Cambrai
75019 PARIS, FRANCE

Tel : (33).1.40.37.08.45

Fax : (33).1.40.38.06.99

E-mail: barriquand.paris@steriflow.com

Website: www.steriflow.com