

# Aurum.Process.Technology

TECHNOLOGY FOR HEAT TRANSFER SOLUTIONS

# The Company

**Aurum Process Technology** designs, manufactures and sells equipment and processing plants related to heat and mass transfer.

We have advanced knowledge in thermodynamics, fluids dynamics, finite elements analysis, and design optimization.

## **Where we are**

**Aurum Process Technology** has its headquarters in Murcia (Spain).

# Why choosing us?

- **Aurum Process Technology** is a company focused on process engineering that develops new technologies to carry out thermal treatments in industry.
- We provide successful solutions for a variety of industries included food, biotechnology, cosmetics, pharmaceuticals, environment, biofuel, chemical and also for universities and research centres. It must also be mentioned that the Aurum Process Technology technical team has an experience supported by 10.000 references in 80 countries.
- We are devoted to innovation. Our team of engineers is constantly looking for excellence and enjoy surprising our customers with solutions that really meet their needs.
- The progress of **Aurum Process Technology** is based on the customer service, as we provide them with a permanent and personalized attention. We are suppliers of machines but also of ideas.

# Product Range

## **Heat Exchangers**

Corrugated Tube

Dinamic : Astute / Rotative

## **Processing elements**

Deaerator system series

Reactors: Cooker series/ Cooler series / T-Sensation

Piston Pump. Bp Series

Aseptic filler series

Cleaning in place

## **Automatic Packaging Machines**

## **Compleat processing plants**

# Heat Exchangers

Coarrugated Tubes

Dinamic: Astute / Rotative

# Coarrugated Tubes



Aurum Foods applies corrugated tubes in its shell and tube heat exchangers.

The corrugated profile creates extra turbulence.

It disrupts the boundary layer near the tube wall.

The extra turbulence created reduces the formation of fouling layers.

Through corrugation increased heat transfer is obtained when compared with smooth tube heat exchangers.

Less area is needed for a given heat transfer duty. This reduces the size/length of the heat exchanger.

Decreased heat exchanger length reduces pressure drop.

It reduces up to 2 times the process time compared with smooth tube in the turbulent phase.

**THE RESULTS IS A OPTIMAL AND MORE ECONOMIC HEAT EXCHANGER**

# Heat Exchangers

## AS SERIES



# ANNULAR SPACE HEAT EXCHANGER

### MATERIALS:

Shell side: AISI 304  
Tube side: AISI 316L  
Other materials available  
on request

### DESIGN CONDITIONS:

P design: 10 barg  
T design: 150 °C

### CONNECTIONS:

Shell side: Flanged  
Tube side: Clamp

### APPLICATIONS:

Medium to high viscosity fluids  
Fluids containing fibers or small  
particulates  
Food / Industrial applications

### AREAS:

1,4 m<sup>2</sup> up to 4,4 m<sup>2</sup>

## DTI SERIES



# INDUSTRIAL DOUBLE TUBE HEAT EXCHANGER

### **MATERIALS:**

Shell side: AISI 304  
Tube side: AISI 316L  
Other materials available on request

### **DESIGN CONDITIONS:**

P design: 10 barg  
T design: 185 °C

### **CONNECTIONS:**

Shell side: DIN Flange  
Tube side: DIN Flange

### **AREAS:**

0,4 m<sup>2</sup> up to 2,4 m<sup>2</sup>

### **APPLICATIONS:**

Low or high viscosity fluids  
Fluids containing fibers or other solids

## DTA SERIES



# HYGIENIC DOUBLE TUBE HEAT EXCHANGER

### MATERIALS:

Shell side: AISI 304  
Tube side: AISI 316L  
Other materials available on request

### DESIGN CONDITIONS:

P design: 10 barg  
T design: 185 °C

### CONNECTIONS:

Shell side: DIN Flange  
Tube side: Tubeplate-Flange

### APPLICATIONS:

Low or high viscosity fluids  
Fluids containing fibers or other solids

### AREAS:

1,4 m<sup>2</sup> up to 18,4 m<sup>2</sup>

## K SERIES



# MULTITUBULAR HEAT EXCHANGER

### **MATERIALS:**

Shell side: AISI 304  
Tube side: AISI 316L  
Other materials available on request

### **DESIGN CONDITIONS:**

P design: 10 barg  
T design: 185 °C

### **CONNECTIONS:**

Shell side: Flanged  
Tube side: Clamp

### **APPLICATIONS:**

Low to intermediate viscosities  
Industrial applications  
CIP heating

### **AREAS:**

0,4 m<sup>2</sup> up to 1,8 m<sup>2</sup>

## MI SERIES



# MULTITUBULAR HEAT EXCHANGER HYGIENIC DESIGN

### MATERIALS:

Shell side: AISI 304  
Tube side: AISI 316L  
Other materials available on request

### DESIGN CONDITIONS:

P design: 10 barg  
T design: 185 °C

### CONNECTIONS:

Shell side: Flanged  
Tube side: Hygienic clamp

### APPLICATIONS:

Low to intermediate viscosities  
Food industry applications  
CIP heating

### AREAS:

1,4 m<sup>2</sup> up to 12,3 m<sup>2</sup>

## F SERIES



# PHARMACEUTICAL INDUSTRY HEAT EXCHANGER

### **MATERIALS:**

Shell side: AISI 316L

Tube side: AISI 316L

Other materials available on request

### **DESIGN CONDITIONS:**

P design: 10 barg

T design: 185 °C

### **CONNECTIONS:**

Shell side: Flanged

Tube side: Clamp

### **AREAS:**

0,6 m<sup>2</sup> up to 3,1 m<sup>2</sup>

### **APPLICATIONS:**

Water / water

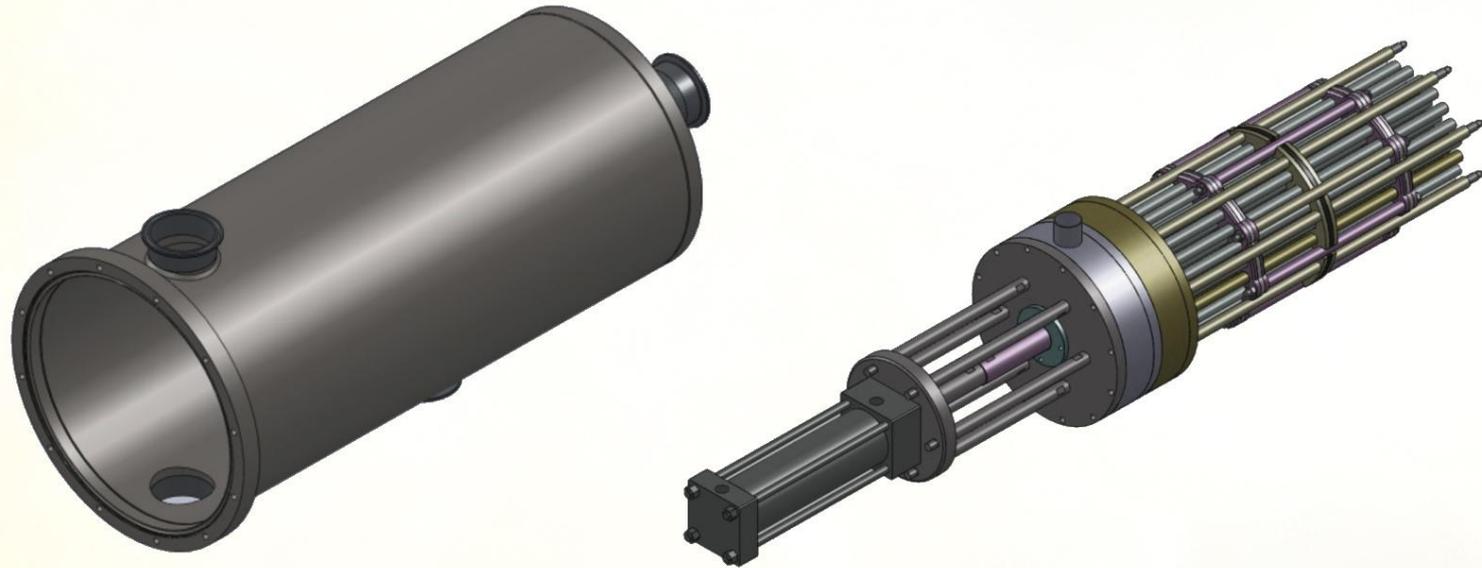
Steam / water

Heating

Cooling

Dinamic: Astute / Rotative

# ASTUTE



Quick visual inspection. The shell is easily dismountable

It is defined as a compartmentalized heat exchanger with forced fluid displacement and scraped surface. It can process products with all kind of viscosity levels, including those who have small or medium-sized particles. Inside each compartment the piston forces a total displacement of the product towards both sides. The main applications of these systems are **Vacuum evaporation, Concentration, Crystallization** and **Cooling**.

# ROTATIVE



The scraped surface heat exchanger consists of 4 tubes through which the product flows. The tubes are internally polished ( $Ra \leq 0.45\mu\text{m}$ ), a bar is in the center and is supported through the wiper plug.

The bar movement is transmitted via an electric motor.

The mission of the blocks scrapers is twofold:

- Scrape the inner surface of the tube preventing the formation of fouling.

- Stir and mix preventing fluid flow stratification, and favoring the formation of a turbulent

# Processing Elements

Deareator

Cooker Series / Cooling Series

Pasteurizer

T-Sensation

Piston Pump. Bp Series

Aseptic Filler Series

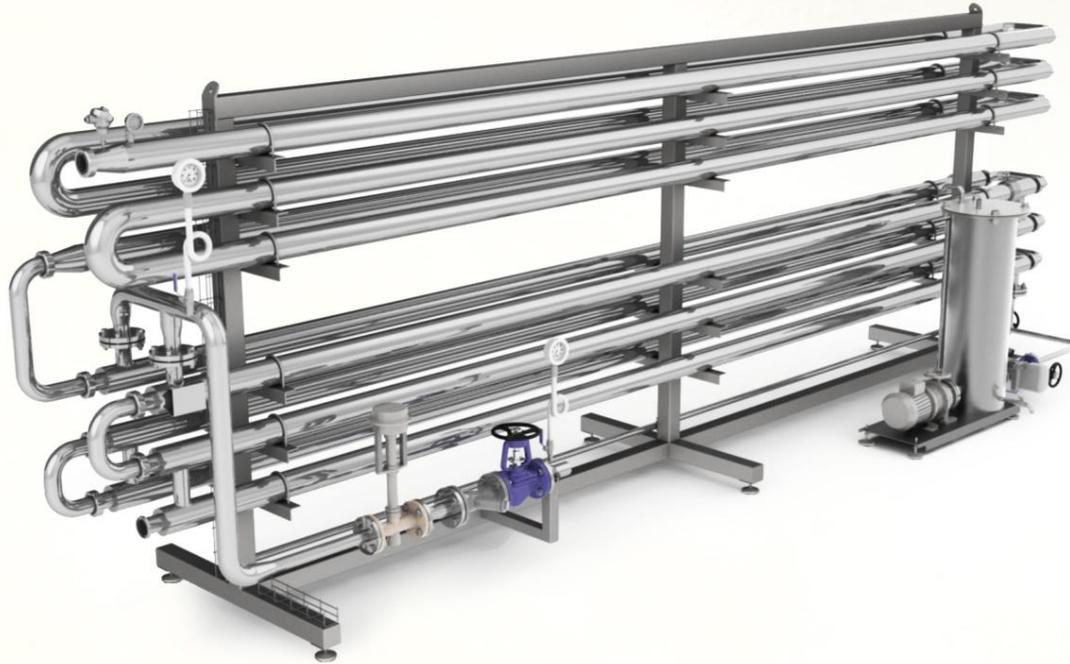
Cleaning in Place. CIP

## DEAREATION SYSTEM SERIES



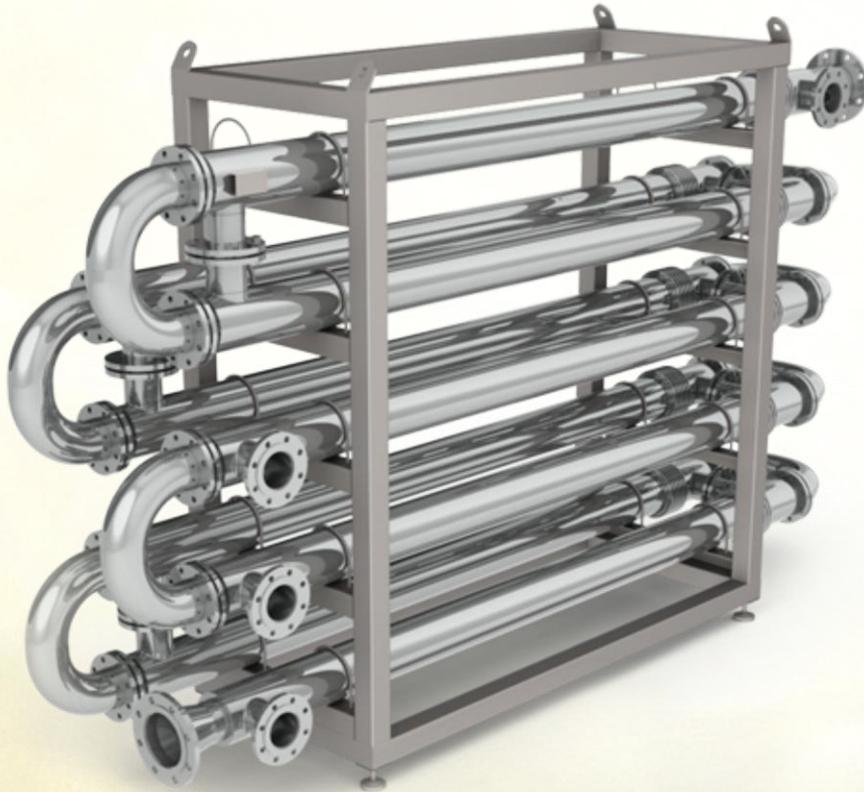
It is always advisable to extract the air as its presence during treatment gives an additional thermal resistance and an additional heating load as it will absorb a fraction of the heat applied to the product, thus reducing the thermal efficiency of the heat exchanger. In addition, the presence of air in the product mixture encourages oxidation processes.

## COOKER SERIES



**Aurum Process Technology** cookers are used in food applications. Often used in the initial stages of treatment to obtain a product with an appropriate structure and to get an enzymatic deactivation prior to the final product sterilization. The use of corrugated tube heat exchangers, means that treatment times are greatly reduced, resulting in a superior product quality.

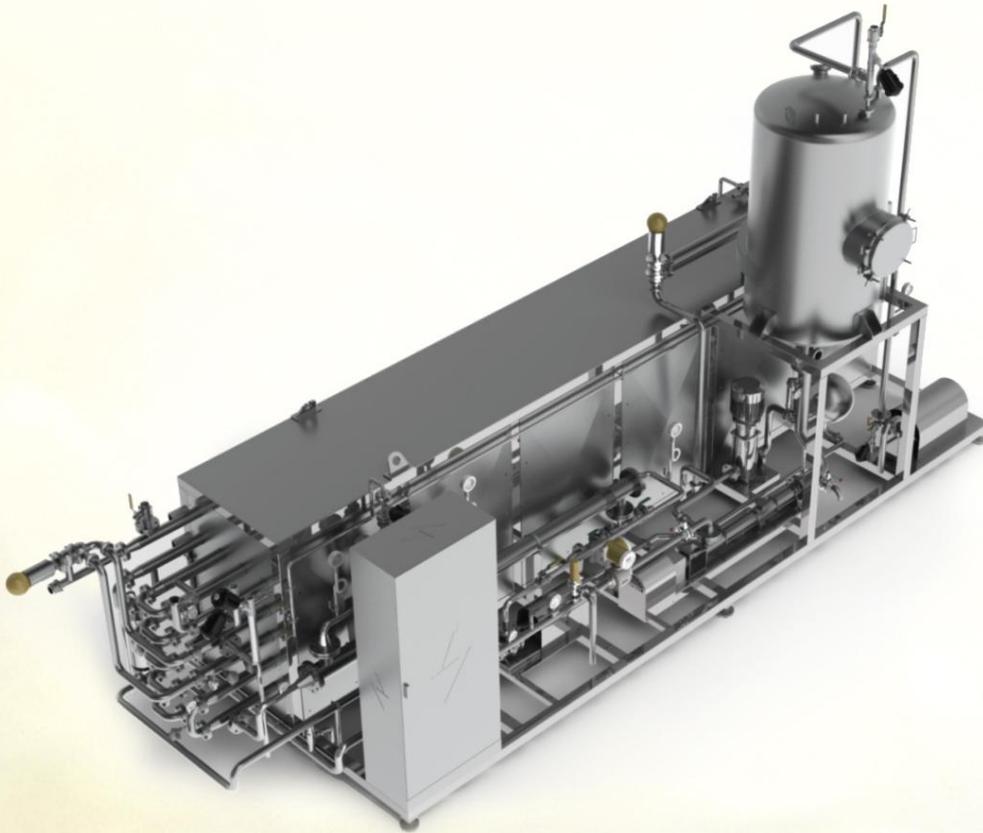
## COOLING SERIES



The industrial coolers designed by **Aurum Process Technology** to work in continuous are normally used in the final stage of the thermal process, reducing the temperature of the product prior to the packaging stage. With our coolers the thermal parameters in the process can be controlled in a precise and efficient way.

The heat exchangers in the cooler are manufactured with the corrugated tube technology and therefore the efficiency of the whole system is doubled if we compare it with smooth tube pasteurizers. This enables us to obtain smaller systems. In the same way, the thermal treatment times are reduced provoking important benefits related to energy saving and preserving the taste and the properties of the product.

## PASTEURISER SERIES



The pasteuriser designed by **Aurum Process Technology** allows to work with the HTST (High Temperature Short Time) method, that is the product is subjected to a high temperature for a short time. This gives a very efficient process which allows the sterilisation process to be optimised to ensure that the desired results are obtained while at the same time the undesirable effects (loss of organic and/or nutritive properties) are minimised.

# T-Sensation

One day we happened to calculate the time it takes to heat a molecule of water placed in a hot surface, and we were amazed that it was so small.

When we compared this time with the headind time required by standard industrial cooking equipment present in the market (much longer than the time spent on home cookingutensils), then we saw a clear business opportunity and we started the engineering of a machine to approach this “limit time”: the time required to heat a water molecule placed on a hot surface.

# The highest area per volume unit

Horizontal volume



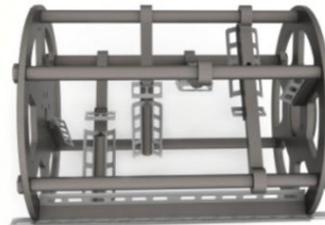
+

Low wall thickness area



+

Super agitation



+

100% scraped surface

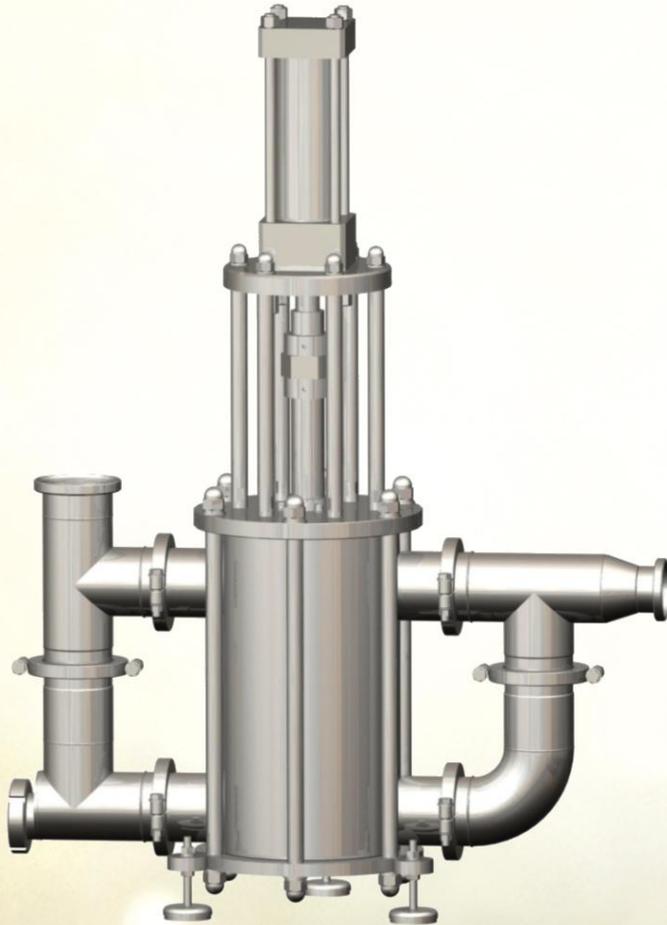


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T-Sensation



## BP SERIES



### MATERIALS:

Product wetted parts:    AISI 316L  
All other parts:            AISI 304

### FLOW RATES:

100 to 12.000 l/hr

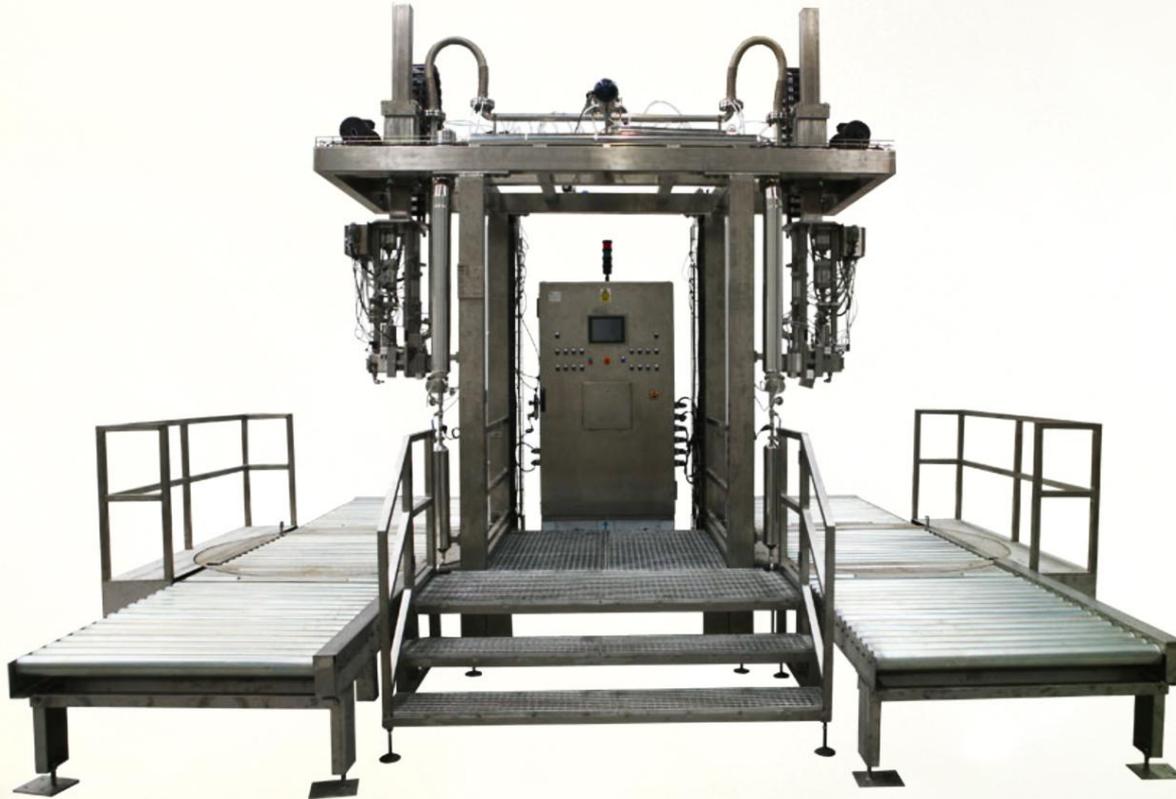
### PRESSURES:

Up to 30 bar

### APPLICATIONS:

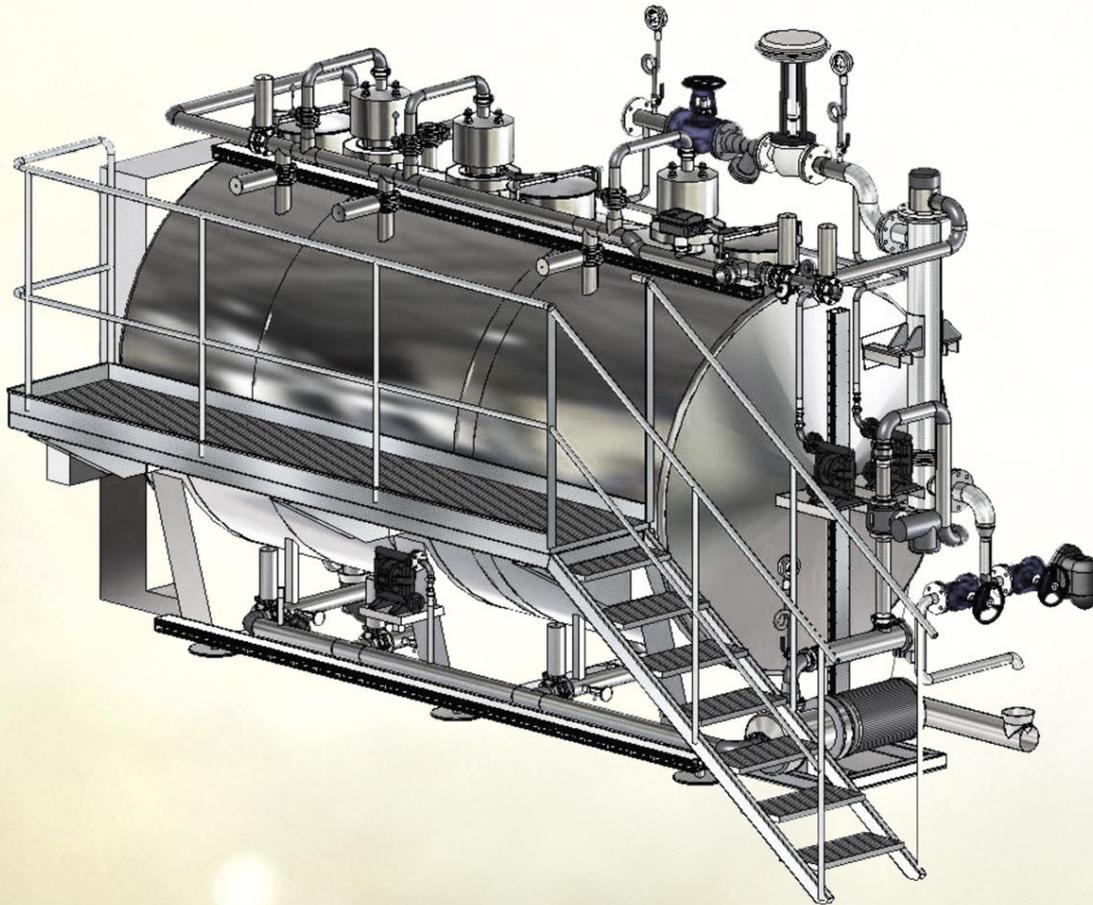
Food products  
Viscous liquids  
Diced fruit  
Vegetables  
Sauces with particles  
Fillings and coatings  
Meat slurries  
Chemical products  
Residual sludge

## ASEPTIC FILLER SERIES



The aseptic filler type "Bag-in-Drum" and "Bag-in-Box" allows products to be filled aseptically. It has a double filling head, with filling nozzles of 1 and 2 inches, depending on the product. It uses pre-formed and pre-sterilised bags of 5 up to 1,000 litres capacity, with a cap size of 1 and 2 inches.

## CLEANING IN PLACE SERIES



The intention of the CIP system is to eliminate organic residues from the processing system such as precipitated proteins, carbohydrates, fats, minerals and many others which form the nutritional base on which bacteria grow and which are the precursors to the phenomenon of bio-corrosion.

# Automatic Packaging Machines

Filling Series

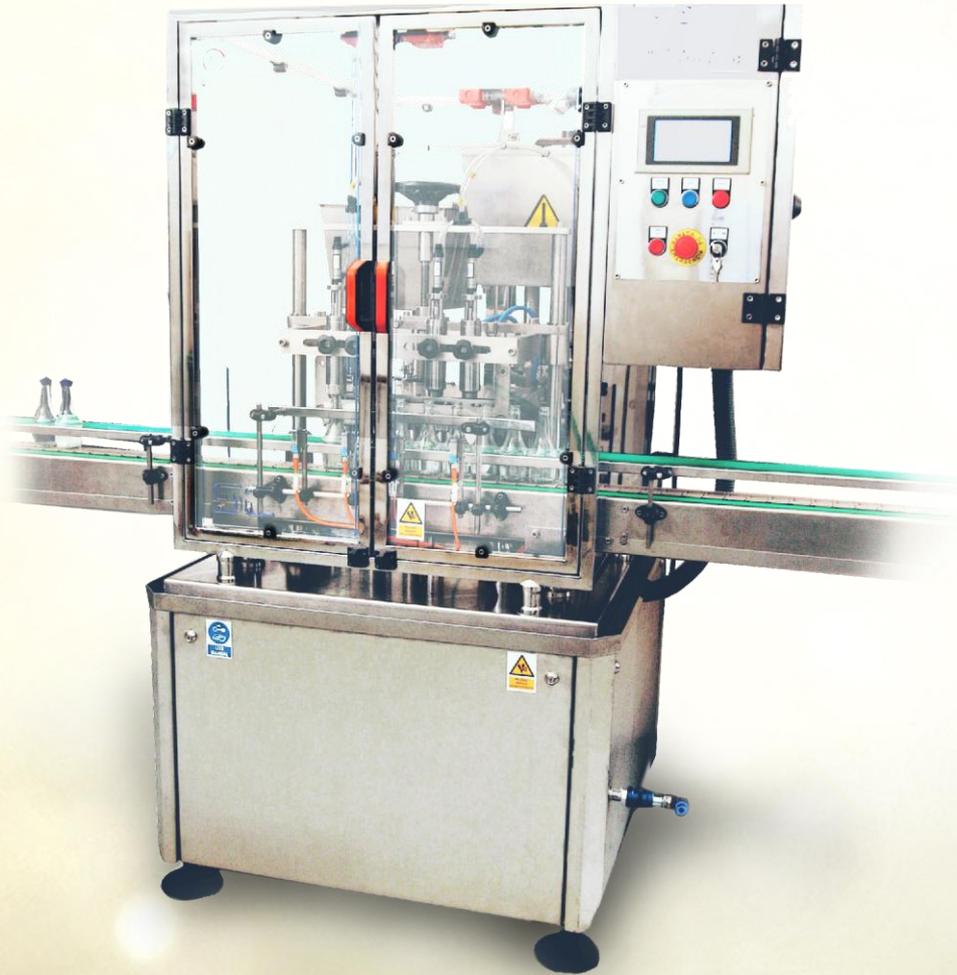
Sealing Series

Capping Series

Dosifier Series

Cartoner Series

# Filling Series



Vacuum filler Machine.  
The number of nozzles is adjustable to the needs of each customer. This machinery fills. It doesn't drips or spills.  
Automatic download of leftovers of product.  
The Railings are adjustable depending on the type of container.  
This machinery is made of the better stainless steel.

# Sealing Series



Heat sealing provides a suitable presentation of the product to market demand. The process of modified atmosphere (vacuum or inert gas) ensures optimal preservation of the product during a period of time determined by the manufacturer.

It is a versatile machine for handling containers of various sizes. Filling of liquid, viscous and granular: Milk products, creams, juices, jams ...

# Capping Series



Allows variable speed to a minimum of 10,000 bottles or bottles per hour.  
Made of stainless steel with hardened heads.  
Tightening torque adjustable clutch.  
Electrical panel with keypads.  
Formats guides full of stars and sanitary plastic.  
Height adjustment of tapping.

# Dosifier Series



The feeders are specific to each product, ensuring maximum filling accuracy and guarantee for the chemical, food and pharmaceutical.

Dispenser liquid, viscous and sparkling products. Easy operation and simple handling. Ability to work with external manual nozzle to the dispenser.

Cleaning the dispenser is made of can be removed manually its entirety in approximately 15 minutes without tools.

# Cartoner Series

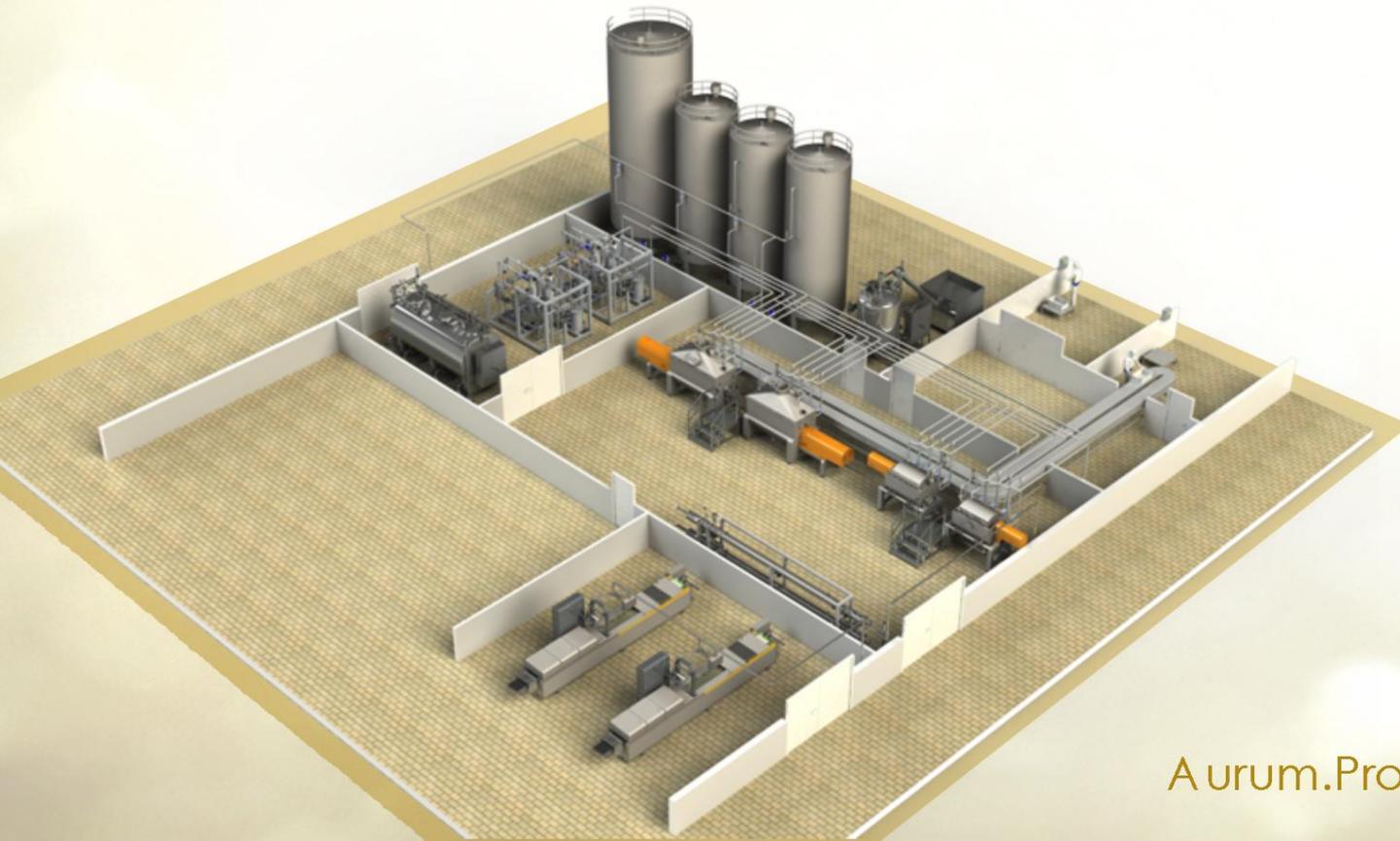


This machine is studied to satisfy the current market needs. Is versatile, Compact size, possibility of automation and easy changeover. The product feed can be manual or automatic. You have the option of automatic feeding brochures.

The closure of the kits may be for mechanical mating tabs or by hot glue injection equipment

# Complete Process Lines

**Aurum Process Technology** has specialized in the design, manufacture and installation of thermal processing plants for Food Industry products for aseptic filling, hot or cold which has given us wide experience in these types of processes. The other business line is composed by the systems for environmental applications. Systems for concentration using Mechanical Vapour Recompression and Systems for Multiple Effect Evaporation have been developed for the treatment of Industrial residues.



# CONTACT

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