

# Géminis<sup>®</sup>

TECHNOLOGICAL CENTRE



Géminis<sup>®</sup>

Procesos Alimentarios, S.L.

# Research, Development And Innovation (R+D+I)



**G**émina is an industrial manufacturer that carries out in its installations all the works of engineering, design and manufacture of aseptic processing and packaging equipment. Research, development and innovation

Research, development and innovation (R+D+I) is a priority activity in Gémina Procesos Alimentarios. This fact has contributed to its developments, installations and machinery carry out their function effectively in food industries located all over the world.



# Pilot Plant and Laboratory, combined services



## Gémina**Food Pilot** + Gémina**Lab**

*Services developed by a multidisciplinary team of expert engineers that makes Gémina a unique company developing food processes.*

**G**émina has directed in 2018 part of its innovative investment in creating a Processes Pilot Plant along with a laboratory for supporting the quality of processed food. This equipment can characterise objectively industrial processes, new machinery and new products and food processes. This service has been developed by a multidisciplinary team of expert engineers in processes design, manufacturing and machinery integration and food technology.





# Gémina FoodPilot

*“ Our vocation  
is to become  
operational part  
of our customers’  
companies.  
Therefore, we put  
at your disposal  
all our skills and  
abilities.”*

In the Pilot Plant Gémina-FoodPilot, industrialists can carry out simulations of new production lines without interfering in their production processes saving time, human and technical resources, improving the daily industrial activity of their companies, without refusing to be at the vanguard of production systems.

Gémina Pilot Plant is also used to meet the food industry customers' need about the development of new products, to face new demands of these new consumers and sector trends efficiently.



# Main objectives of Gémina Pilot Plant:

**#1**

Improve productive  
efficiencies

**#2**

Reduce production  
costs

**#3**

Quantify the risks  
and dangers of your  
processes

**#4**

Improve the quality  
of manufactured  
products

**#5**

Facilitate access  
to innovation and  
development to  
industrialists

**#6**

Quantify  
objectively the  
performance of  
processes

**#7**

Test new production  
processes

**#8**

Develop new products

**#9**

Personalize your  
processes

**#10**

Optimise production  
processes

# Laboratory of Research, Development and Validation of Processes Gémina-Lab



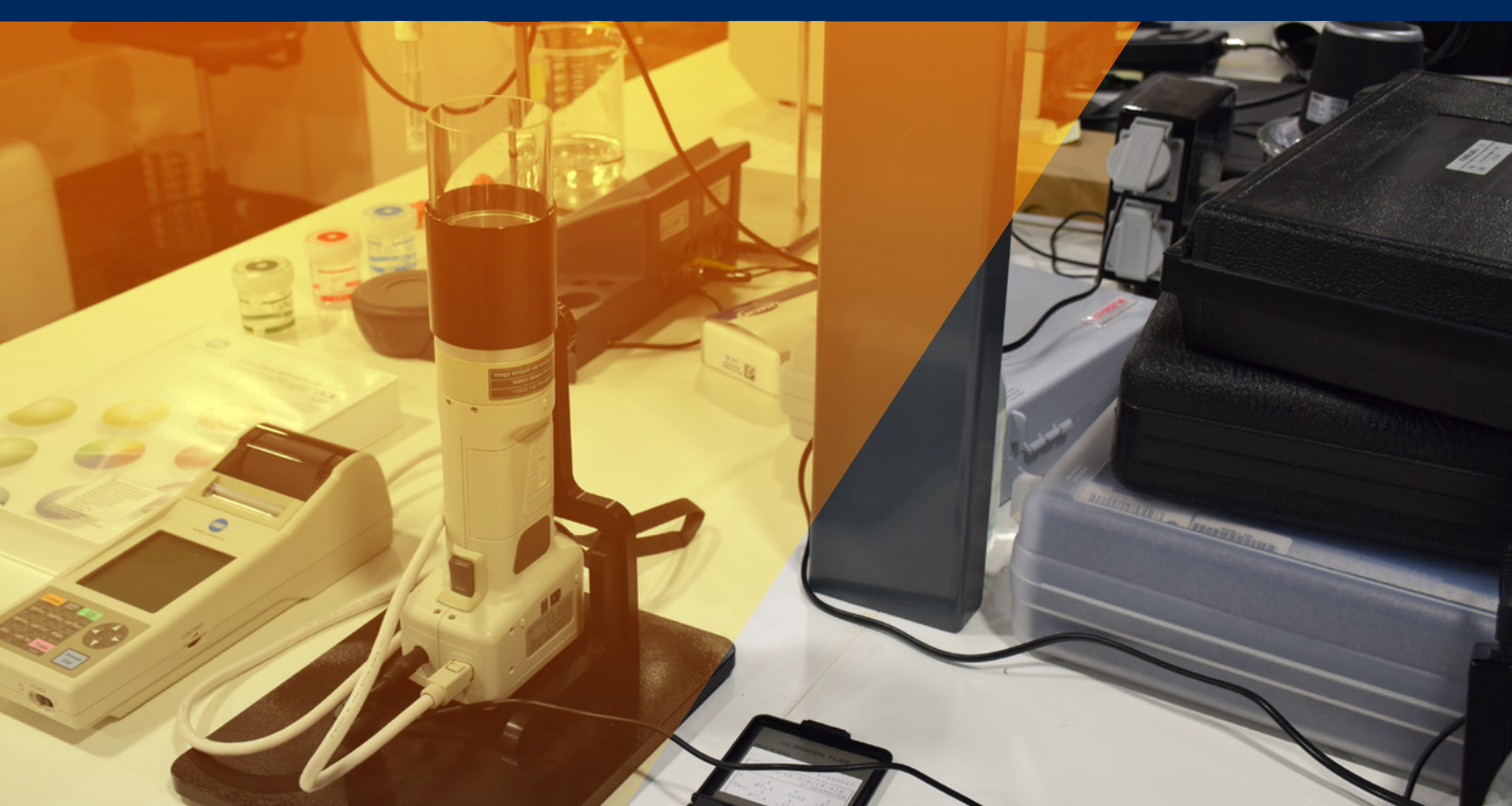
**T**his new laboratory is equipped with instrumentation, analytic equipment and highly qualified technical staff. Gémina-Lab can meet a wide range of analytical competences applied to both the characterisation of processes and processed food as to raw materials.

Its competences include analytical techniques that go from chemical, physical, biochemical to microbiological techniques. These techniques are necessary for

the quantification and objective characterisation of processes efficacy and processed food quality emulating real industrial conditions of production.

Gémina-Lab is a laboratory that is in constant evolution and is equipped with new infrastructures and specialised services, adapting in every moment to the needs of your food industry customers.





“ Techniques for the quantification and objective characterisation of processes efficacy and processed food quality emulating real industrial conditions of production”





# Laboratory of Research, Development, Innovation and Validation of Processes Gémina-Lab

“ The combined service Gémina –Pilot and Gémina-Lab is highly appreciated by our customers for offering them a great added value.”





**I**n short, Gémina-Pilot and Gémina-Lab is a Gémina Procesos Alimentarios' combined service that is highly valued by our customers due to its multiple benefits and it complements harmoniously your industrial installations, productive processes and business purposes.

**“Laboratory and pilot plant for research and develop technologies that improve food production processes”**



# Main equipment of Processes Laboratory and Process Pilot Plant

**T**he new Gémina's service consist of the combination of a laboratory and a pilot plant, which are conceived to research and develop new food industry processes and are equipped in its PILOT PLANT version so

they represent the most important and evaluative processes of manufacturing lines. The laboratory and the pilot plant are in constant evolution incorporating continuously new equipment, which sometimes is our own made equipment.





A close-up photograph of a female scientist with brown hair, wearing safety goggles and blue nitrile gloves. She is focused on looking through the eyepiece of a black and white compound microscope. Her right hand is adjusting the stage of the microscope. The background is a soft, out-of-focus laboratory setting.

*“Gémina’s ability to develop its own equipment gives a great advantage to the new service by personalising and facilitating the development of the tests.”*





Gémina Procesos Alimentarios's ability to develop its own equipment and machinery means this service gains a personalization and adaptation to the requirements that each project needs in order to carry out the studies and tests more easily and effectively. Thanks to the flexibility of having the factory in the adjacent facilities, the combined service increases the possibility of finding the required solutions for all type of food processes tests.

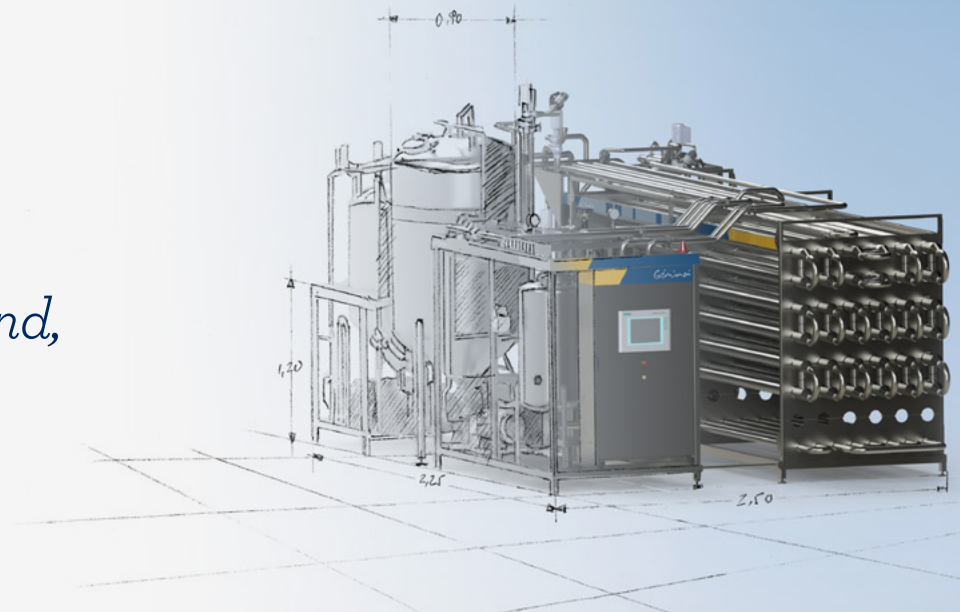
# Our Company



GÉMINA Procesos Alimentarios, S.L. is located in Jumilla, Murcia, a Spanish autonomous region which is a model in food production. GÉMINA has

25 years of experience in designing, making and integration of systems that offer innovative solutions for the food sector industry.

*You imagine and,*  
**We do it.**



## Business Lines

### Design and manufacture of machinery

- Design, manufacturing and integration of process equipment and food aseptic packing.
- The Manufacture is completely carried out in our installations.
- All our machinery has CE safety certificate and complies with the most exigent standards.
- I+D+i: We bet on technology innovation.

### Engineering and design of processes: Projects management

In Gémina, we love our work and, therefore, our engineering department includes from the design, the calculation, the manufacture, the assembly, the automation and the start-up of machines and installations. Therefore, we include a global and integral management of all our projects.

We care of every detail of the process and we advise our clients to optimize their product elaboration procedure. Gémina designs every process adapting it to the customers' requirements and standing out our customers' products among their competitors.

- Versatility and flexibility: we can plan from a plant, a simple line expansion to the installation of an equipment in a process.
- Ability of adaptation to different places and circumstances.
- Our engineering department has a big technical capacity and a long experience in this area.
- Gémina guarantees your success because we manage the whole project, reducing risks, costs and deadlines.

# Services Provided

## 1 - sechnical assistance service: Alfa-Laval official technical and distributor service

- Maintenance service.
- Installation service
- Calibrations
- Replacement parts services.
- "Training" service
- Online monitoring of production process and breakdown resolution.

## 2 - Automation and Robotics

- Automation of custom-made processes: integral solutions.
- Total Control of the process: SCADA systems, record and control of data.
- Custom-made robotics applications: different solutions for different necessities.

## 3 - Food integral feature

- Optimization, development and validation of processing and packing equipment, besides of food elaboration processes.
- Consultancy for implantation of standards such as BRC, IFS: ISO 22.000, FSSC...
- Product development [process + formula].

# Customer Service

Gémina is characterized by its exclusive and permanent customer service. Our vocation is to become operational part of our customers' companies

Our closeness, technical competence, wide experience and self-confident are some of the main features why our costumers place their trust into our equipments and services.



# Industries

Industrial sectors where GEMINA develops its projects:

- Milk industry
- Tomato industry
- Juice and drink industry
- Vegetables and fruits industry
- Citrus fruits industry



# Products Catalogue

## Aseptic fillings

Aseptic machine designed to fill metal drums with pre-sterilised bags that have pressurised cap. Besides, it also fills carton containers.

## Bag in box

Aseptic filling automatic feeding of pre-sterilized bags that have pressurized cap and a low volume (1-20 litres)

## Extractors

Processing of a wide variety of products to get a puree free of seeds and peels.

Different methods of using: extractor or refiner

## Heat exchanger

We offer all kind of models and designs, from single-tube to partial ones or rough surface exchangers.

## Forced circulation evaporators

Concentrators that have great capacity and performance for products having great viscosity and a high content in solid matter.

Multiple stages adapted to the process and needs.

## Hot/cold break units

These units process tomato puree and tomato paste guaranteeing the total or partial deactivation of the pectolitic enzymes and allowing the preservation of the pectin.

## Laboratory pilot plants

Pasteurization and aseptic packing in the laboratory of small product samples, such as juices, soda drinks, vegetable creams, soups, etc.

## Tubular pasteurizer

Project and constructive development of pasteurization plants adapted to different needs.

## UHT

Low- acid liquid products (pH>4.5 for milk pH>6.5) are treated at 135-150°C for a few seconds with indirect heating or direct steam injection.

## Heaters and coolers

Heating of products before getting through treatments such as refining or mixing. Cooling previous pasteurization treatments.

## Cream extraction plants

Cream extractions of all types of fruits and vegetables, in both cold and hot extraction processes.

## Aseptic Monoblock

Integration of an aseptic filling in a pasteurization plant, creating a compact, functional and versatile machine that is adaptable to a wide range of products.

## Crusher

Defrosting of stored products such as fruit juices, fruit and vegetables pastes, creams, sauces and so on.

## Piston Pump

Conceived to pump viscous products, big particles of products (fruit in cubes or in pieces) or products that are sensible to shear stress.

## Inverse osmosis equipment

Reduction of salinity of salty waters and sea waters.

## Blending room / blending

Blending by recipes from database and transference of process parameters to pasteurizers.

## Emptying of cans by aspiration

Unloading of metal cans and aseptic bags in blending rooms through emptying techniques in very few seconds.

## Cip systems

Cip systems are used to carry out the chemical cleaning of food installations in a completely automatic way.

## Processing tanks

Storage in aseptic packing tanks for high and low ph products, in liquid or viscous products.

## Blending tanks

We have a wide range of vertical and horizontal tanks with different types of shaking and volumes. They are adapted to process needs.

## Storage tanks

Storage rooms in stainless steel tanks having standard volumes or custom-made volumes.

## Finisher or pulping machine

It refines crushed product to remove peels, stems and seeds.

## Hammer mill

It is a grinder of pitted food (vegetables among others) for processing raw material.

## Robotics

Robotic applications in proportion to palletized/ depalletized for the start and the end of processing and packing lines.



Gémina® at your service

**Gémina**®

Procesos Alimentarios, S.L.

**GÉMINA Procesos Alimentarios S.L.**

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