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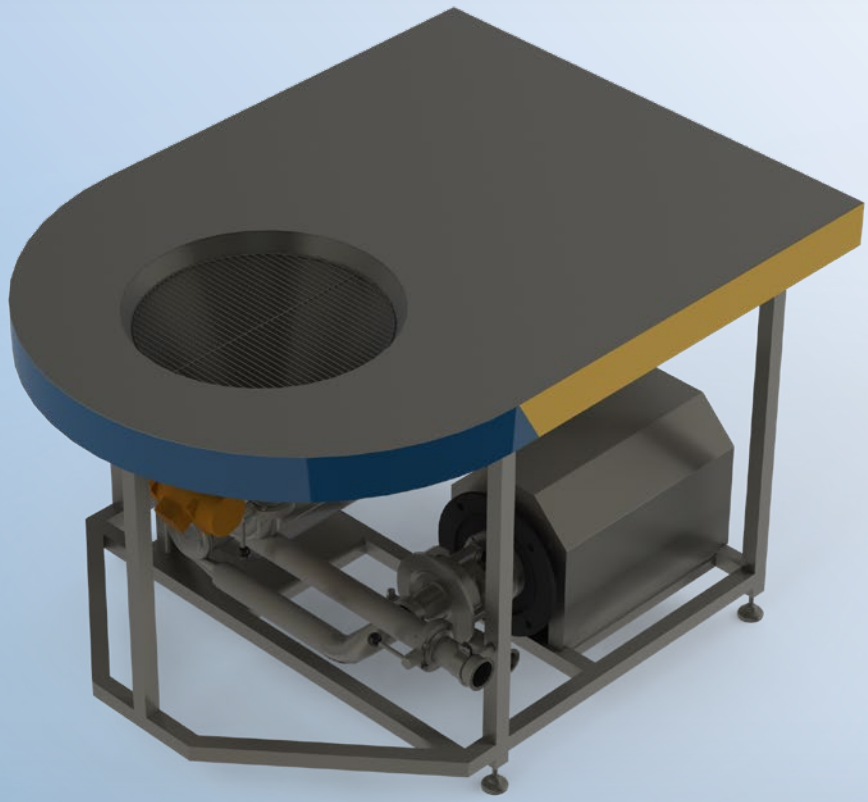
POWDER DISSOLUTOR



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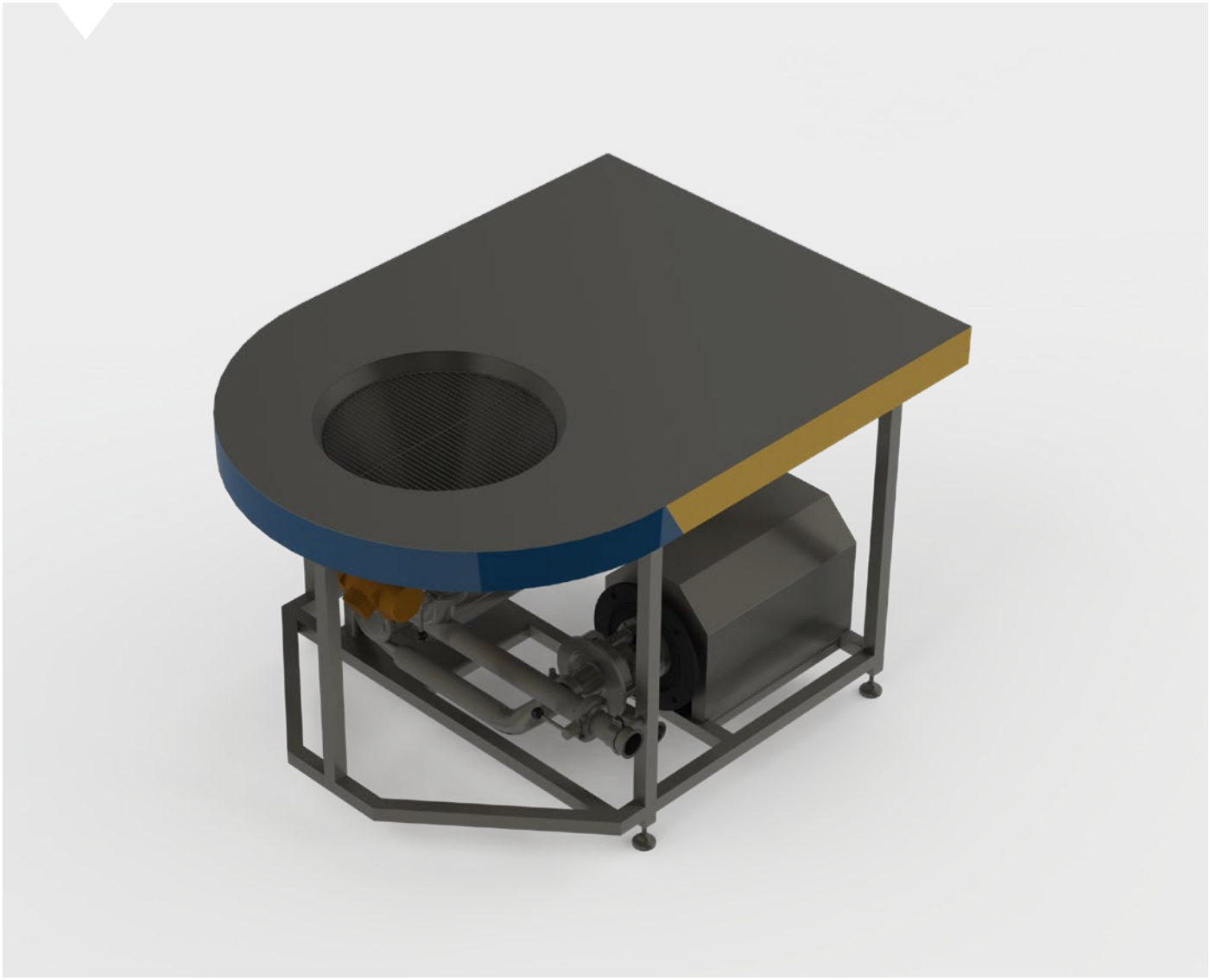
Procesos Alimentarios, S.L.

PRINCIPLE OF OPERATION

Equipment used to dissolve solid additives, in powder or crystals, in a fluid, getting a homogeneous mixture. Dissolution of heavy products such as sugar, salts, pectins or proteins, getting a final product which has a low viscosity and a complete homogeneity. This system avoids sediments in the following filtering stages of the process.

It is a simple equipment which has been created to replace the traditional agitators/blenders, getting a higher performance and production.



HOW DOES IT WORK?

When the connections of the dilutor fluid intake to the premixing pump and the dissolution exit of the homogenization pump have been carried out, the solid additive that is dissolved in the hopper is added with the lower valve closed.

When the solvent fluid inlet valve is open, the equipment is set in motion and the lower valve of the Hopper is changed to open position allowing the addition of the solid product to the fluid product through Venturi effect. The vibrator avoids that part of the additive accumulates in the hopper.

In the premixing pump is produced the first part of the dissolution of the solid into the liquid, which is homogenized later. The homogenization pump reduces any lump remaining in the premixture dissolution, refining it and getting a completely homogeneous product with no solid particles.

APPLICATIONS

- Production of creams, sauces, juices and beverages.
- Rehydration of powdered milk and other dairy products.
- Dissolution of heavy products such as amides, proteins, B-glucans, salts, thickenings etc.
- Preparation of pharmaceutic and homeopathic solutions.
- Production of personal care and hygiene products, such as: shampoos, toothpaste, etc.
- Preparation of colours for textile and chemical industry.

ADVANTAGES

Main advantages of powder dissolutor:

- Efficiency: Reduction of the time of dissolution and blending process regarding traditional methods, high homogeneity and total absence of lumps or undiluted parts, even in high viscosity products.
- Reliability: Gémina Procesos Alimentarios only works with the best market brands. Therefore, the components used in the manufacture of Gémina machines have the highest quality.
- All the equipment has been subjected to different tests and exhaustive controls, including required security measures.
- Modular design: The criteria applied to the design of Gémina powder dissolution machine has resulted in a machine of small dimensions which can be adapted to earlier installations. This equipment can be easily connected to the different line components and it can be also integrated to a tank for operating like a batch mixing equipment.
- Cleaning: It can be integrated in CIP cleaning systems line. It is designed and made according to the most demanding hygiene standards in both superficial cleaning and inside of the tubes and components.
- Sieve selection: Gémina Procesos Alimentarios offers a variety of protection sieves to be placed in the solid feed hopper, which are adapted to the different grain sizes used.
- Ergonomics: This machine has been designed evaluating the efforts and movements carried out by the operator during its operation, minimizing overexertion and facilitating tasks.

Omission of the hard task of the upper power supply in the mixing tanks avoiding going up and down stairs and difficult operations performed in narrow raised platforms.

The dimensions of the table allow to place the packed additives on it, rising them by mechanical appliances. When containers are lightweight can be directly emptied through the circular aperture placed on the top of the table.

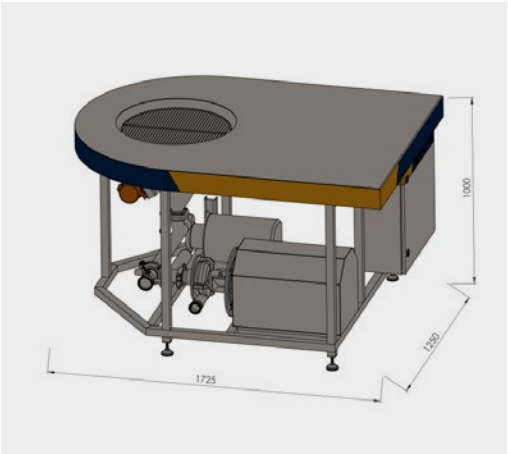
MATERIALS

Gémina Procesos Alimentarios only uses highest quality materials which are approved by FDA (U.S. Food and Drug Administration), according to the required diverse standards and quality requirements.

The parts which are in contact with the product are made of AISI 316 steel and the chassis and the rest of the machine are of AISI 304 steel. The components made by another manufacturers have the CE or equivalent marking.

FEATURES

- Stainless steel tubular chassis which has levelling supports
- Electrical and operator control panel made of stainless Steel and IP65 security level.
- Table in a 3mm thickness stainless steel, without corners and edges, avoiding dirt accumulation.
- Hopper with vibrator for getting a continuous feeding of solid and to avoid rest of product on it.
- Protection sieve against foreign bodies.
- Pre-mixing pump and homogenization pump.
- Equipment capacity: 80kg of sugar- type powder per minute, 3800kg/h
- Valving required for controlling the feeding of solid and fluid.
- Variable performances depending on the physical and chemical features of the employed products.
- CE marking.



DIMENSIONS AND WEIGHTS

Dimensions: 1725x1250x 1000 mm
Weight: 350kg

Our company

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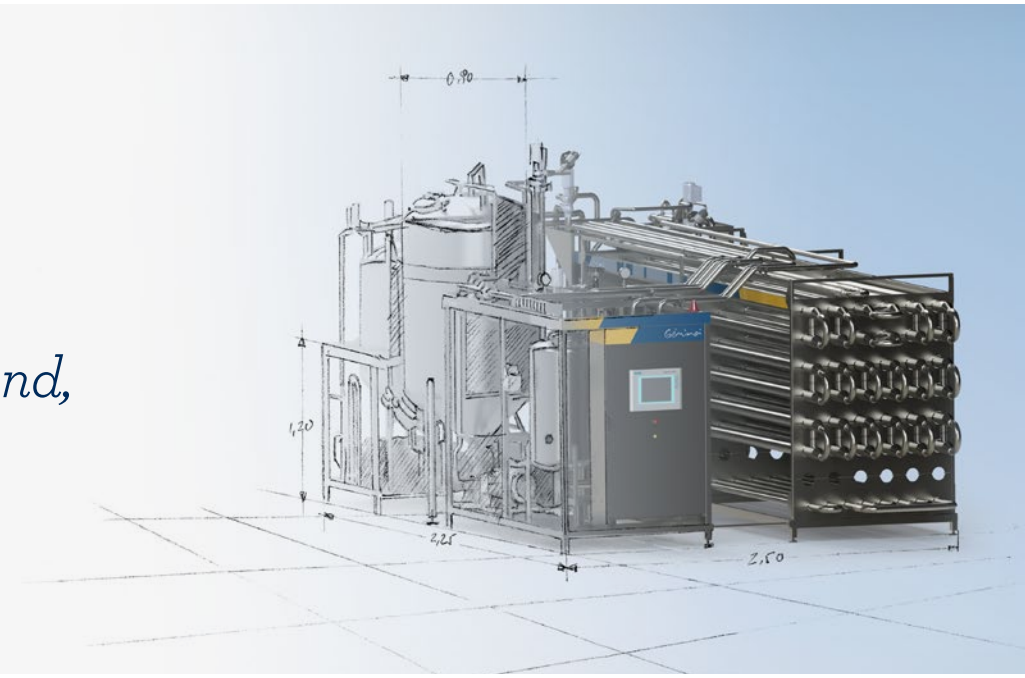
Procesos Alimentarios, S.L.

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 which 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 - Technical 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 Quality

- 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 part in an operational way of the companies which we work.

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:

- **Dairy industry**
- **Tomato industry**
- **Juice and drink industry**
- **Vegetables and fruits industry**
- **Citrus fruits industry**

Products catalogue

Aseptic fillings

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

Bag in box

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

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 which have great capacity and performance for products having great viscosity and a high content in solid matter. Multiple stages which are 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 pectine.

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 which 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

It is conceived to pump viscous products, big particles of products (fruit in cubes or in pieces) or product which 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 proccesing and packing lines.

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