

Extremely flexible and innovative: Batch Vacuum Processing Plant for ketchup, mayonnaise, dressing and sauce manufacture

THE SOLUTION



For liquid processes

AZO.
LIQUIDS

»With Gautschi and AZO LIQUIDS, two innovative companies have found each other. Our expertise from production processes constantly flows into developing new technologies.«

Urs Bütikofer, Production Manager at Gautschi Spezialitäten AG



Gautschi and AZO LIQUIDS - An innovative team

Superior flexibility in the manufacture of mayonnaises, sauces, sressings and ketchups

The customer **GAUTSCHI**

The Swiss company Gautschi Spezialitäten AG was founded in 1960 by Rene Gautschi and was made a public limited company in 1974. Gautschi employs 50 people and generated an annual turnover of 18 million Swiss francs for 2011. The company's export figures stand at 5%, with a very positive growth rate. Annual production statistics stand at 3,200 tonnes,

22% of which were organic products. Gautschi holds the BRC/5 Grade A and ISO 9001:2008 standards and in addition has an organic certification. The company has over 40 years' experience as a producer of cold, warm and salad sauces, mayonnaise, margarines/ sandwich crèmes, soups, spreads and ketchup, and is a pioneering organic sauce manufacturer.

A particular specialist area is the development of soups and sauces which are adapted exactly to customer requirements. Even the packaging can be individually customised. The products are

produced with customer labels as well as their own. Streamlined structures, fast decision-making and high flexibility are the key factors in Gautschi's success.

Investment objectives

- Uprating due to growing demand
- High flexibility as a result of the latest technology in order to react quickly to changes in market trends and to be able to produce small batches economically
- Simplification of processes and fast recipe adaptation
- Clear documentation of manufactured batches





The batch vacuum processing plant type zoatec® BG offers superior flexibility

»As a small, dynamic company, we satisfy the demands of each individual customer quickly and to the highest quality. Machines that are easy to clean and easily accessible are essential to us.«

Urs Bütikofer, Production Manager at Gautschi Spezialitäten AG

Production requirements and advantages of the new system

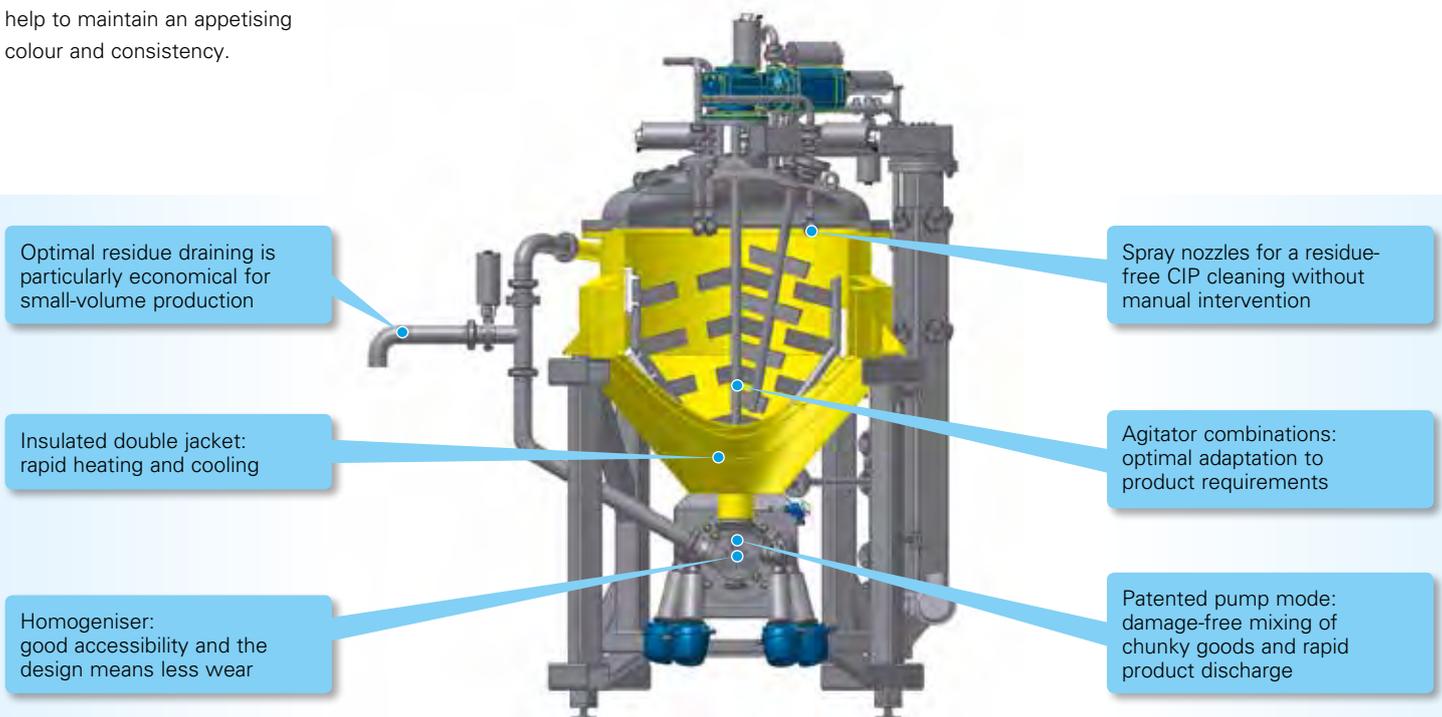
Colour and stability play a large part in the manufacture of mayonnaise. The homogenous consistency of the products (e.g. emulsions) should be maintained under certain conditions over a specified period of time. Shorter homogenisation periods preserve the product and help to maintain an appetising colour and consistency.

The manufacture of ketchup however, depends on the rapid heating of the product. This is achieved through successful heat transfer in the process vessel. Production times are therefore significantly reduced.

For the manufacture of dressings, as well as mayonnaise, the colour and stability of the product is very important.

There are two base recipes for Gautschi sauces: one yoghurt/oil-

based and one oil/water-based. The requirements for manufacturing mayonnaise and ketchup also apply in this case. Automated production ensures high consistency and adherence to recipes.



»The trials carried out by AZO LIQUIDS's Customer Process Centre have been more than satisfactory. We tested a recipe whereby 10mm-large cucumber pieces were sucked into the system. The pieces were neither destroyed nor crushed. Upscaling from the AZO LIQUIDS laboratory machine to our BG400 system was one to one precise.«

Martine Keller,
Deputy Production Manager
at Gautschi Spezialitäten AG



Lid with electrical lifting device

Batch vacuum processing plant type zoatec® BG

The ideal solution for the food Industry

The solution in detail

Design of the plant

The mixing vessel has a usable volume of 400 litres and has a double jacket for indirect heating and cooling. The insulation jacket reduces condensation, scorching and cold transmission to the outer wall of the vessel.

Agitating and mixing device

The lid contains an agitator with scraping plates which is powered by gear motor with a frequency

converter. The frequency converter allows optimal adaptation of the mixing speed to product properties. The PDFE scraper plates are fixed in a form-fitting way to the agitator, without any additional fixing elements, and reduce the risk of overheating when heating or crystallisation on the interior wall of the vessel when cooling. The lid has an integrated flow breaker which ensures optimal mixing of the product.

CIP cleaning without additional pumps

Spray nozzles are also installed, which allow residue-free CIP cleaning without manual intervention. The homogeniser supplies these nozzles with 2-3 bar of pressure and a flow speed higher than 2 m/s. In this way there is no need for an additional high-pressure pump for cleaning. If necessary, the system can be aerated through a nitrogen inlet

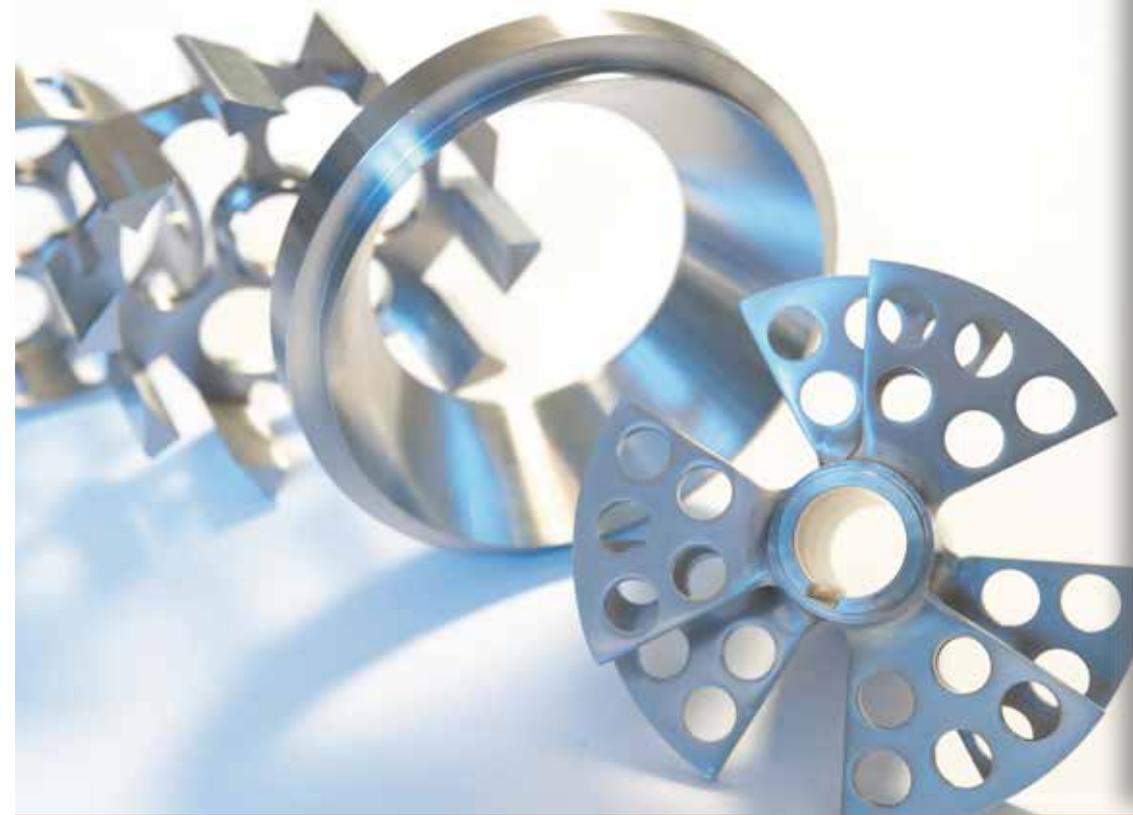
in the lid's ventilation pipe. A sight glass allows the mixing process to be observed. Safety devices such as limit switches and over pressure valves are also installed in the lid, which can be raised by up to 800 mm via an electric-powered lifting device. This allows easy inspection of the vessels's contents and manual feeding from the top of the vessel.



The separation of the process module and supply unit offers clear advantages



Spray nozzles for residue-free CIP cleaning



»Due to the optimal product discharge of this system we have significantly less residue. Small batches can also be manufactured efficiently.«

Yves Moser, responsible for production at Gautschi Spezialitäten AG

The homogeniser is the heart of the system

Feeding vessel

For liquid feeding, there is a liquid feeding hopper on the right side with a usable volume of 200 litres. The hopper, which stands on load cells, allows a range of different liquids to be weighed accurately and prepared. A powder hopper with a usable volume of 75 litres is located on the left side of the system. There the operator adds the pre-weighed powders and the liquid premix. From both hoppers

the product is sucked into the homogeniser by vacuum in the process vessel. The two additional inlets are each for different liquids, which are dosed into to the homogeniser by automatic meters.

Supply module

The modular supply module is located next to the process unit and contains the vacuum pump, the control unit for the heating/cooling cycle, the components for the pneumatic supply unit and the automatic liquid meters.

»AZO LIQUIDS vacuum process plants offer clear advantages due to the separation of the process module and the supply unit. This allows flexible installation options and also makes cleaning significantly easier.«

Urs Bütikofer, Production Manager at Gautschi Spezialitäten AG



Separate supply unit with pneumatic and vacuum unit and liquid meters

»The homogeniser has well and truly convinced us, and has met all of our expectations. The better homogeneity of the product is clear to see, colour and stability are faultless. Furthermore, we are achieving higher efficiency as a result of considerably shorter homogenisation times.«

Martine Keller,
Deputy Production Manager
at Gautschi Spezialitäten AG



Feeding of powders and liquid premix via a feeding vessel

Higher product quality and shorter homogenisation times

The clear advantages of the AZO LIQUIDS homogeniser

Homogeniser

The homogeniser has a significant influence on the quality of the products. Droplet distribution, colour and stability are exceptional. In addition, it impresses with shorter homogenisation times. The homogeniser, located on the vessel outlet, is regulated by a frequency converter and therefore

allows itself to be perfectly adapted to each product's properties in the manufacture of suspensions and emulsions.

Patented pump mode

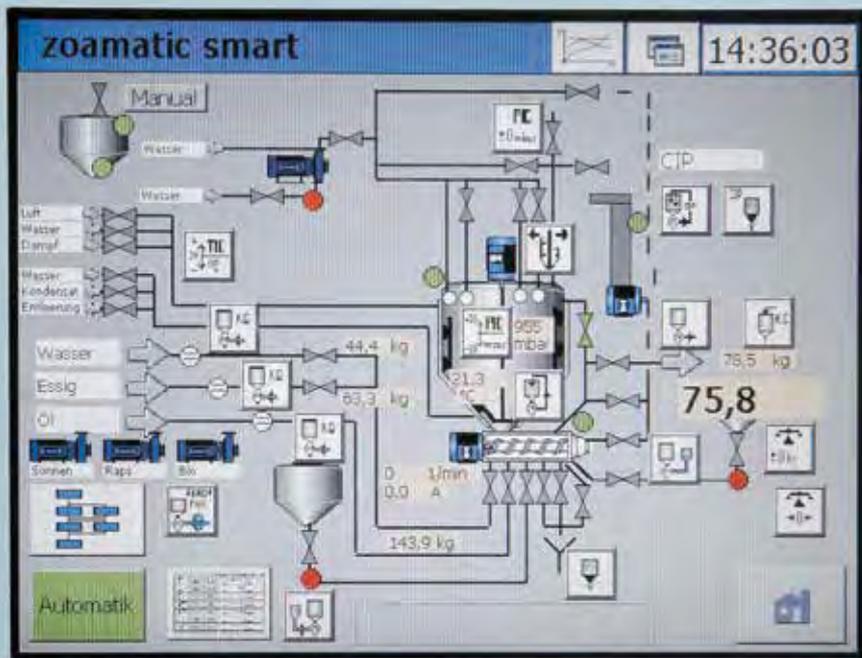
The homogeniser's innovative pump mode offers some significant advantages compared to conventional systems. It allows damage-free mixing of chunky goods without using an additional

pump with piping. It also replaces cost-intensive discharge and recirculation pumps, as it allows fast product discharge, also in the case shear-sensitive products.



Good accessibility to the homogeniser

The homogeniser, with pump mode, allows damage-free mixing of chunky goods without using an additional pump



»The zoamatic control unit is characterised by its professional operator guidance, very simple recipe input and maintenance. It ensures permanent production transparency.«

Yves Moser, responsible for production, Gautschi Spezialitäten AG

The whole process seen through zoamatic smart

Smart control unit

A simple and convenient solution

The manufacture of French dressing

After the programme has been started on the touch panel of the AZO LIQUIDS vacuum processing plant, the process begins with the feeding of water and milk, whereby a pump automatically doses the desired quantity into the large liquid vessel via load cells. The operator adds the necessary spices manually to the egg yolk and vinegar liquid

premix in the small volume hopper and confirms the manual work step at the control system. Subsequently, the liquid premix along with the milk is automatically sucked in (without the homogeniser) and the homogenisation is automatically started. Next, oil, water and vinegar are automatically added via a flow-meter. Meanwhile, the

operator manually adds herbs, as per the recipe, to the small volume hopper and again confirms this action at the control system. With the automatic feeding of the herbs the mixing process and the recirculation in pump mode are activated. Samples can be taken during subsequent discharge.

Process Control

The new vacuum processing plant is equipped with a zoamatic smart control unit, based on a 10" touch panel made by Siemens. The entire process is clearly visualised and can be manually operated. Thanks to a programme editor, the customer has the opportunity to store up to 300 recipes and to leave production to run in automatic operation.



The intuitive system is well received by the operating personnel



Automatic but also manual operation is possible



Conclusion:

»We use many vacuum processing plants of different manufacturers. The new AZO LIQUIDS concept has convinced us since there is no need for an additional pump for chunky raw materials or CIP cleaning. For us, this is a significant cost benefit. As a result, we quickly ordered a second BG400 process plant.«

Urs Bütikofer, Production Manager
at Gautschi Spezialitäten AG