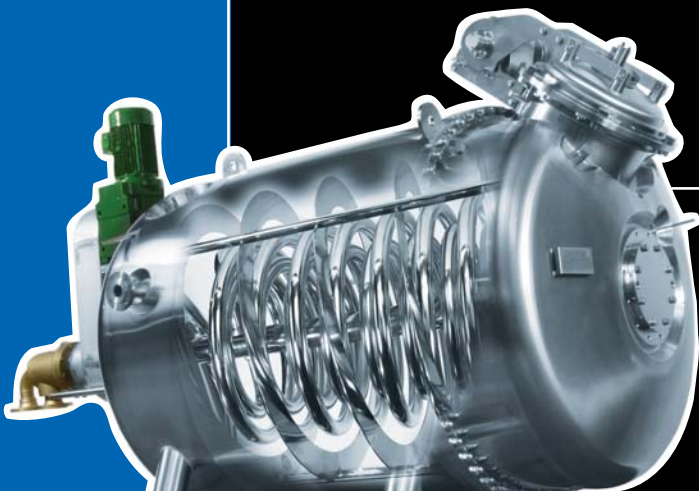


process systems

WALDNER
Firmengruppe

batch cooking
right from the start



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English

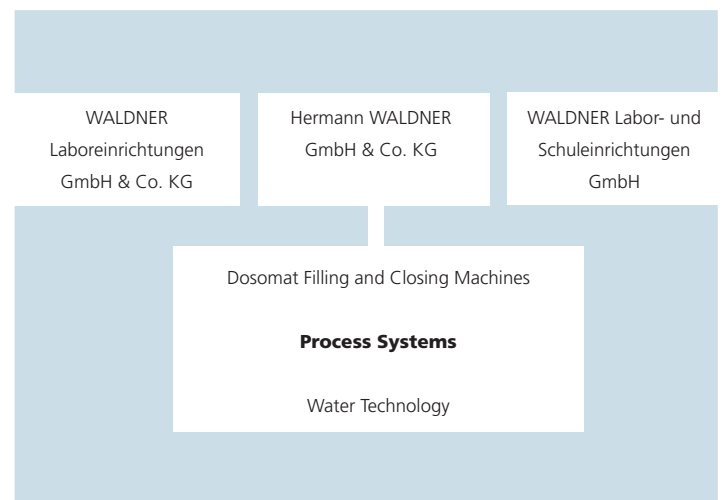


The WALDNER Group - a strong trio

The WALDNER Corporate Group consists of three companies:

- Hermann WALDNER GmbH & Co. KG
- WALDNER Laboreinrichtungen GmbH & Co. KG
- WALDNER Labor- und Schuleinrichtungen GmbH

For nearly one century WALDNER has been setting standards. For the benefit of our customers our business divisions take advantage of our cross-border capabilities. With their size and their involvement in the Corporate Group the three Waldner companies represent stability, expertise and continuity.



Waldner Process Systems

Belonging to Herman Waldner GmbH & Co. KG the business unit Process Systems offers customized procedural solutions for the pharmaceutical, chemical and food industry.

- **Isolators and containments**

Full containment systems for the contamination-free handling of highly active and toxic substances (API) and isolators for sterile applications.

- **Drying technology**

Mobile vacuum contact dryers for dust-free powder handling, vacuum tray dryers conform to GMP standards, intermittent and circulating air tray dryers.

- **Vessels, skids and units**

Vessel technology, ranging from single preparation, pressure and reaction vessels to complete units, container systems, single-layer pressure filters.

- **Cooking systems**

Batch cooking lines for the food industry, for the production of aseptic fruit preparations, jam and many more.

Including the process measuring and control equipment, our products can be combined on the basis of the modular design principle. From competent advisory service on the process development and planning to the realisation of turn-key projects, we provide you with an individual service package that is consequently based on your needs. In short - you obtain what we expect from ourselves everyday: First-class solutions.





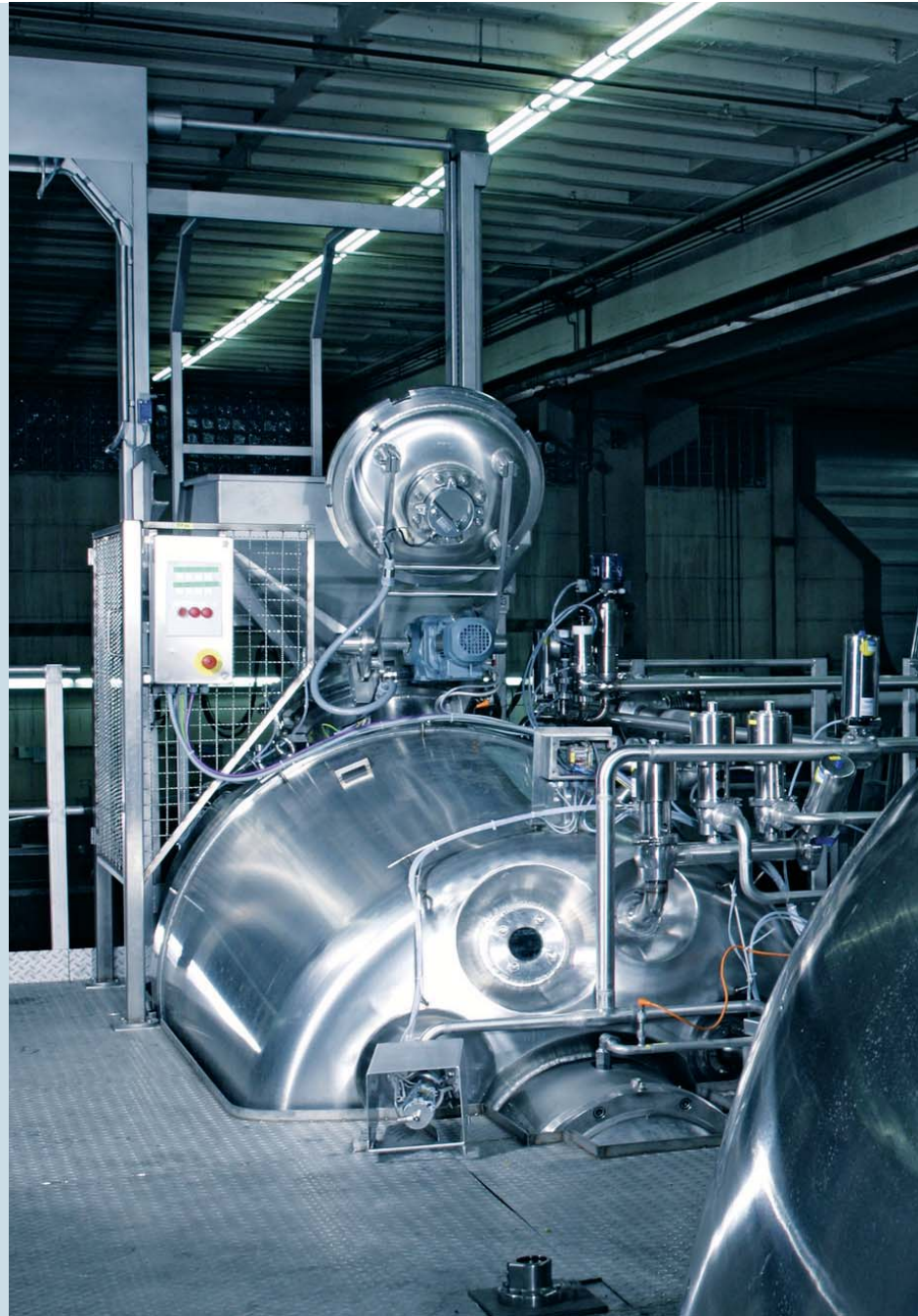
batch cooking

right from the start

Safety you can rely on

More than 80 realized projects in the world market give evidence of Waldner Process Systems' well-founded know-how in the production of batch cooking lines for the food industry. The Waldner Process Systems lines are mainly applied in the field of pressure-resistant and aseptic processing. For more than two decades, we also have been concentrating on the difficult production of high-grade fruit preparations. Features like maintaining optimal levels of fruit integrity with

a minimum of product loss, short production times, aroma recovery and aseptic safety are dominating the "cooking scene". Cooking processes have to be carried out quickly and gently in order to avoid degradation to the product while maintaining the taste. When the focus is on aseptic design we benefit from our knowledge and experience of the high production standards in the biotechnology and pharmaceutical industries.





Trends of tomorrow

Process optimization, flexible adaptation to the market and cost management are the key factors of future trends. Focussing on further developments, Waldner Process Systems developed a state-of-the-art pilot plant that is now located in our test laboratory in Wangen, Germany. Achieved test results can be scaled up and provide a safe and reliable basis for process innovations or the improvement of already technologies. Take on the chance today to create the trends of tomorrow.



In focus: Your product

You provide the raw material and the recipes – this is the starting point for the development of our process technology. Our most important projects are batch lines for:

- high-grade fruit preparations
- jam, compote, marmalade
- bake resistant jam and fillings
- baby food
- soups, sauces
- meat dishes

For the production of fruit preparations Waldner Process Systems provide a cooking and cooling technology that meets the highest demands. Furthermore we offer custom-built solutions for user specific requirements.

But whatever your are producing – the goal is a process of constant quality that remains transparent and controllable at any time.

Components or comprehensive solutions?

The modular concept of our systems enables solutions ranging from single components to complete production lines.

Specifically designed to your needs and on the basis of a realistic cost analysis, the Waldner Process Systems engineers prepare a detailed construction design for your project. Many years of experience in stainless steel treatment results

in the first class production and assembly of plant components and modules. In addition to the cooking and cooling lines, Waldner Process Systems also provide the entire peripheral equipment including piping, controls, assembly and start up of complex units and lines This wide scope allows creative project solutions. The engineering behind it is clever and sometimes surprisingly straightforward – but always made-to-measure.

Now and in the future: We are there for you

A Waldner Process Systems batch cooking line has an average service life of several decades. A successful, constant collaboration with our customers is our principal goal. Only after perfect integration in your production process do we consider a project a success. The training of your staff, support and advisory service, as well as reliable supply of spare parts is a matter of course to us – in short: Your process optimization takes center stage and our team is at your disposal for all issues concerning your production process. Take us at our word.



The production lines

Waldner Process Systems batch cooking lines are single-stage or multi-stage production lines in vertical or horizontal design. The standard sizes range from 120 to 5.000 litres. In addition to the below described versions there are numerous special designs and combinations that can be realized upon customer-specific requirements.

Single-stage vertical cooking and cooling line

This line consists of a tank and an external tube condenser. The processes that can be performed with this system are very diverse. The complete batch, that means cooking and cooling, is realized with one tank. The mixing action is performed by means of coaxial agitators and the energy input occurs via the double jacket. Due to the integrated condenser, cooling and the use of vacuum can be carried out in one step. This system is designed for medium and smaller production quantities (1 to 3 tons per batch).

Two-stage vertical cooking and cooling line

This type of line is designed for larger production quantities and consists of a cooker and a cooler. The production process is divided into two stages. The cooking process is carried out in the first stage, while cooling is realized in the second stage with the integrated vacuum cooler. Due to the fact that the cooling processes generally require less time than the cooking processes, this plant type can also be built as a unit, equipped with two cookers and one cooler.

Two-stage cooking and cooling line, consisting of a horizontal cooker and a vertical cooler

Characteristic for this system is the horizontal position of the cooker. A further attribute of the horizontal cooker is its newly developed agitator system: A spiral agitator that serves, firstly, for the excellent and homogenous mixing action and, secondly, in a large part for the energy input. At the same time the product is heated via the double jacket. The advantages of this dual energy input are extremely short production times, due the fact that the spiral agitator heats the product from the inside as well. This product-friendly agitator system means less stress for the product and thus a point in the favour of quality. The horizontal cooker can be combined with a second stage for the cooling process. This can be realized either with a conventional vacuum cooler with tube condenser or with our new turbo cooler whose innovative cooling technology supersedes an additional condenser.





Turbo cooler – all-in-one cooling tank and condenser

This innovative, patented cooling system excellently serves for pasteurization of fruit preparations with maintaining of temperature (approx. +95°C) and for vacuum cooling (approx. +30°C). With this system an external condenser is needless since the double jacket of the cooling tank serves as condenser. A turbine blows the exhaust vapors against the double jacket where they condense and return to the product as condensate. Due to the lack of an external condenser, the turbo cooler provides optimal aseptic safety. Thanks to its unique construction the turbo cooler is very easy to clean, since the double jacket also serves for the sterilisation of the internal tank surfaces. This way SIP/CIP cleaning can be easily and quickly completed.

The turbo cooler can be placed either in vertical or in inclined position. With the inclined position a better mixture is obtained, and so flow interrupters are not required.

Accessories

In addition to the aforementioned cooking and cooling systems Waldner Process Systems also provides and installs the entire required periphery for complex production lines:

- automatic feeding with fruit wagons
- manhole either with central locking system or manually operated
- sugar dosing with weighing station
- automatic dosing of glucose, pectin, starch etc.
- transfer pipe with cutter, screens and magnetic separator
- prefabricated energy modules for short assembly times
- sampling system
- control (process control system with language changeover, batch record for documentation)
- modem connection, for remote diagnosis and maintenance
- filling stations
- aseptic containers





Our pilot plant – the future in mind

Flexibility is in demand and often the test series carried out with our pilot plant consist of round about 20 recipes with various products. It is up to you if you wish to carry out tests together with us in Wangen, Germany or at your production site – with its useful capacity of 120 litres our “trendsetter” is portable and flexible.

With its basic equipment our pilot plant is mainly designed for cooking, defrosting and gentle mixing processes. It serves

above all for the production of aseptic fruit preparations as well as for jam and various food preparations. With our one-stage pilot plant a complete batch can be carried out. The gently acting, heatable spiral agitator and the large heat exchanging surface enable optimum heat transmission – this way the product is heated quickly with minimal stress. By means of the counter rotating spiral and the Teflon scrapers the product is homogeneously mixed. Thanks to the minimal stress to the product and short process times damages to the product are avoided. After pasteurisation the cooling

is accomplished via the spiral agitator in combination with the double jacket and the vacuum cooling with condenser.

For its “visits” the Waldner Process Systems pilot plant is completely equipped with piping, controls and energy supply. In order to put it into operation, our customers just have to provide a connection to the energy source at their facility.



Returnable stainless steel container systems

For safe transportation of the products that have been produced on our equipment we offer standard and special containers in various versions and for all fields of application. For the aseptic filling of fruit preparations Waldner Process Systems provide pressure-resistant aseptic containers in round standard and special versions. Their sizes range from 200 to 1,000 litres. Furthermore we supply cubic containers for liquids, viscose media and bulk material in sizes ranging from 200 to 2,500 litres. The surface and weld seam process-



ing of our containers comply with food standards. Our production department works with all stainless steel alloys and also special alloys. Depending on your requirements our containers are equipped with different handhole and manhole versions, tension ring and clamp screws. The frames and undercarriages consisting of stainless steel, aluminium or galvanised steel, are available in standard versions or hermetically welded. And last but not least: Waldner Process Systems containers are heatable - either with water, steam or electricity.





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