

ESAU & HUEBER



PART OF THE SCHULZ BRAND FAMILY:



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Process Technology

Past - Present - Future

Nothing is as constant as change! What has evolved from centuries long tradition of craftsmanship must today be - mainly due to rapid and on-going technological development - looked at from an entirely different perspective.

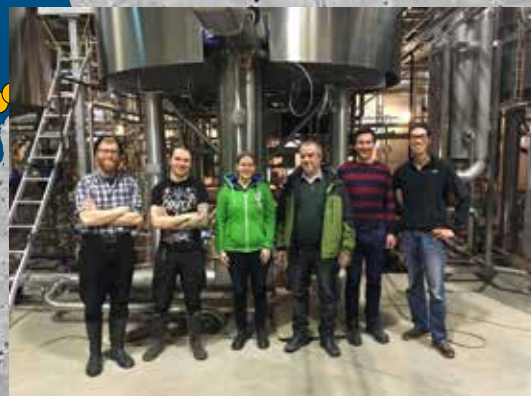
In the present day, success is highly based on process-reliability. For that, system competence and holistic solutions become important; in short, an efficient partner who offers consultation, planning and implementation as well as service, all from one source, is optimal.

For companies from the Brewery, Food, Beverage and Biotechnology, Pharma & Cosmetics sectors, Esau & Hueber is a strong partner that supports its clients in all phases. The aim is to provide complete service from initial planning through to completion and beyond.

Esau & Hueber designs and builds high-tech facilities, develops advanced processes and highly efficient process technology. In doing so, attention is paid to individual client requirements. This applies not only to specific procedural and process steps but also to the control and visualization of all processes.



ESAU & HUEBER Worldwide



People all over the world enjoy beer that is brewed by the latest brewing technology provided by Esau & Hueber. For all brewing processes - from the brewhouse to the pressure tank - custom modules and systems are designed, built and installed. Esau & Hueber is always the right partner for sustainability and quality, state-of-the-art

process technology for production of pharmaceutical and cosmetic products. Be it globally operated brewery groups or local family-run business, be it North or South America, APAC or European countries: In these areas too, Esau & Hueber offers solutions from a single source. The company is certified to the highest international standards and of-

fers high performance hygienic process systems for the safe and efficient production of medications. Together with all our partners inside the SCHULZ Brand Family we will realize projects and serve customers all over the world.



Brewery, Food & Beverage

Turnkey Projects

From time immemorial, brewing of beer is a part of daily life in many cultures – not only in the land of beer, Bavaria! Our national and international brewery customers are rightfully proud of their tradition, history and outstanding brewing products. Traditionally, construction of breweries is the main business area of Esau & Hueber. Innovative ideas and clients' wishes are transformed into high quality and effective working modules and plant systems. The aim is to increase the efficiency of beer production and,

at the same time, to ensure consistent high quality. All relevant planning and construction stages are covered by a team of qualified engineers and process engineers. From the initial idea, to the plant design, assembly, maintenance and service: Everything is carried out in-house. The know-how of Esau & Hueber goes far beyond the actual plant construction. As part of Esau & Hueber's commitment to customer service, Esau & Hueber always provides assistance to its partners in starting up new plants and staff training and introduction.





Brewery, Food & Beverage

Cold Block

Esau & Hueber's brewery program includes all process steps in the cold-block of a brewery; numerous patents and other intellectual property rights are evidence of continuous development work. Worldwide, the company is a technology leader in the areas of wort aeration and yeast management. In addition to the construction of complete

fermenting and storage cellars, flash pasteurizers, carbonation and blending systems, as well as filling systems for party cans and syphon bottles further complement Esau & Hueber's diverse range. Our CIP-cleaning and disinfection systems designed for sustainability always ensure a constantly high hygiene level in the facility.

From consulting, planning, development, manufacturing, installation and start-up to maintenance, Esau & Hueber offers an extensive range of products and comprehensive services. Decades of experience enables Esau & Hueber to optimally synchronize, control and monitor the specific modules across all steps of the process. All individual components of Esau & Hueber's brewing plant are of high quality, compatible and perform the tasks allocated to them safely and reliably. To ensure that all modules are perfectly synchronized and highest brewing quality is guaranteed, in addition to all the mechanical parts, Esau & Hueber also provides the complete automation system manufactured by Esau & Hueber in-house.



Here, the focus is on the general WINBREW®-System. All plant components are manufactured individually for the particular application. Plant construction and beer brewing has another similarity: craftsmanship!





Biotechnology, Pharma & Cosmetics

Process Technology

Reliable operation of production plants as well as the reproducibility of the processes is essential in the pharmaceutical industry. Planning, manufacturing and installation of equipment or equipment parts must be perfectly synchronised and subject to strict rules.

Through many years of contact with pharmaceutical manufacturers, Esau & Hueber has gained this experience,

especially in the specific branch of pharmaceutical production processes such as fermentation (USP), purification (DSP), cleaning and mixing.

In recent years, it has become apparent that many brewery systems that were adapted to new production processes. This poses unique challenges to the plant-designers and constructors. Mostly, space must be taken into consideration, not only for the equipment but also for the operation and maintenance. In many cases, the production runs round the clock. This means: Often, the installation of new equipment or the retrofitting of existing equipment must be carried out while the plant is in operation. This demands minimum idle time and a careful operation. High demands are placed on the plant constructors. Esau & Hueber has realized a large number of projects in so-called skid construction. Esau & Hueber has always been able to carry out the reconstruction adhering to tight deadlines under the most difficult



conditions. Esau & Hueber has its own research and development department and maintains close contacts with universities.

This on-going research and affiliation with universities has enabled Esau & Hueber to have a number of new developments patented. This specialized knowledge enables Esau & Hueber to satisfy special customer requirements.

As an independent planner and plant constructor, Esau & Hueber always looks for the optimal solution together with its clients.





LS56-RA560
Pufferansatzbehälter
3000 Liter

Biotechnology, Pharma & Cosmetics

Media Supply, Media Disposal

The production of chemically or biotechnologically produced medication takes place in a strictly controlled environment in reproducible production methodology. The quality of raw materials, process media and intermediate products is constantly monitored and controlled during the production process.

These steps call for the most stringent hygiene standards. Esau & Hueber provides supply components and systems that ensure a consistent quality of the media used. Besides distribution, receipt, storage, transport and delivery of the liquid or gaseous media and the liquefied compressed gases also play an important part. Beyond this, some special requirements such as explosion protection are also required for certain components. The highest level

of technical know-how is required here. Esau & Hueber has acquired this knowledge over many decades and has, on this basis, realized numerous technologically-demanding projects. Besides media supply, disposal also plays an essential role. Waste water is generated during the production process or while cleaning the equipment. The complexity of the substances present in the water is a major challenge for every waste water treatment system. The conta-



Apart from the human factor, continuous production of medication primarily requires an optimally designed and well-functioning facility. Liquid and gaseous components or media required for the production determine the quality of the active ingredients in the medicinal products. Many also serve as a solvent in the product manufacturing, such as, for instance, ultra pure water. During the production process, materials also come in contact with the end product.



minated fluids must be collected and treated before they are discharged into public sewer system or outlet channel. Depending on the type of contents, this takes place through different process steps, often with heat treatment or the use of oxidants. The statutory provisions provide precise guidelines whether and to what extent the substances contained in the waste water must be eliminated. Esau & Hueber implements treatment and decontamination systems which are exactly tailored to the respective on-site requirements. In the last few decades, several plants have been planned, designed, manufactured in-house, installed and put into operation by Esau & Hueber for various pharmaceutical manufacturers.



Automation

With a process system tailored to the respective application, the course is set for a comprehensive and efficient production process.

A control system specially designed for the particular task supports the entire production process, for example, by controlling batch processes and material flows.

The ideal automation technology can only be realized when the entire process sequence is understood.

Having acquired this know-how over decades, Esau & Hueber now incorporates this knowledge base into the designing and production of its systems. Esau & Hueber is thus able to meet

the highest standards in mechanical engineering, measuring and control technology as well as automation. Esau & Hueber focuses on the “overall system”; therefore, automation projects are customized to specific needs - from the design stage right up to commissioning and maintenance. Here, it is immaterial as to whether the project involves individual plants, plant components, or complete systems. In order to meet the various requirements in the brewery and food processing industries as well as that of the manufacturers in the Biotechnology, Pharma & Cosmetics sector, Esau & Hueber employs automation experts from both segments. The requirements

of GxP, GAMP 5 etc. are taken into account in the project, as stipulated in the FDA provisions.



Service

Each production chain is only as strong as its weakest link. If components or entire systems fail, it always means that there is a significant detrimental effect on the overall production. To prevent the likelihood of such a scenario, Esau & Hueber offers a comprehensive range of services. This includes, among others, a telephone hotline and remote maintenance (online service). These components are an important part of Esau & Hueber's corporate philosophy. Its aim is to develop a long-term partnership, which includes safe and reliable maintenance of systems during their entire life cycle. The objective is to maintain the operational safety of plants and components, so as to guarantee the efficiency of the systems.

Esau & Hueber understands itself not just as a plant constructor, but, above all, also as a service provider. It takes a number of steps to find the perfect solution for the clients.

First and foremost, the initial situation is analysed in detail on-site. Thereafter, model processes can be designed and

tested in the laboratory and in pilot projects. In this way, optimal process steps can be developed and the most suitable plant can be designed and implemented for that particular task.

Esau & Hueber possesses all the required competencies, from definition of tasks to start-up and complete after-sales service. The company is also equipped to handle modernization and optimization of existing plants. This very often involves the task of customizing plants according to new parameters or requirements.

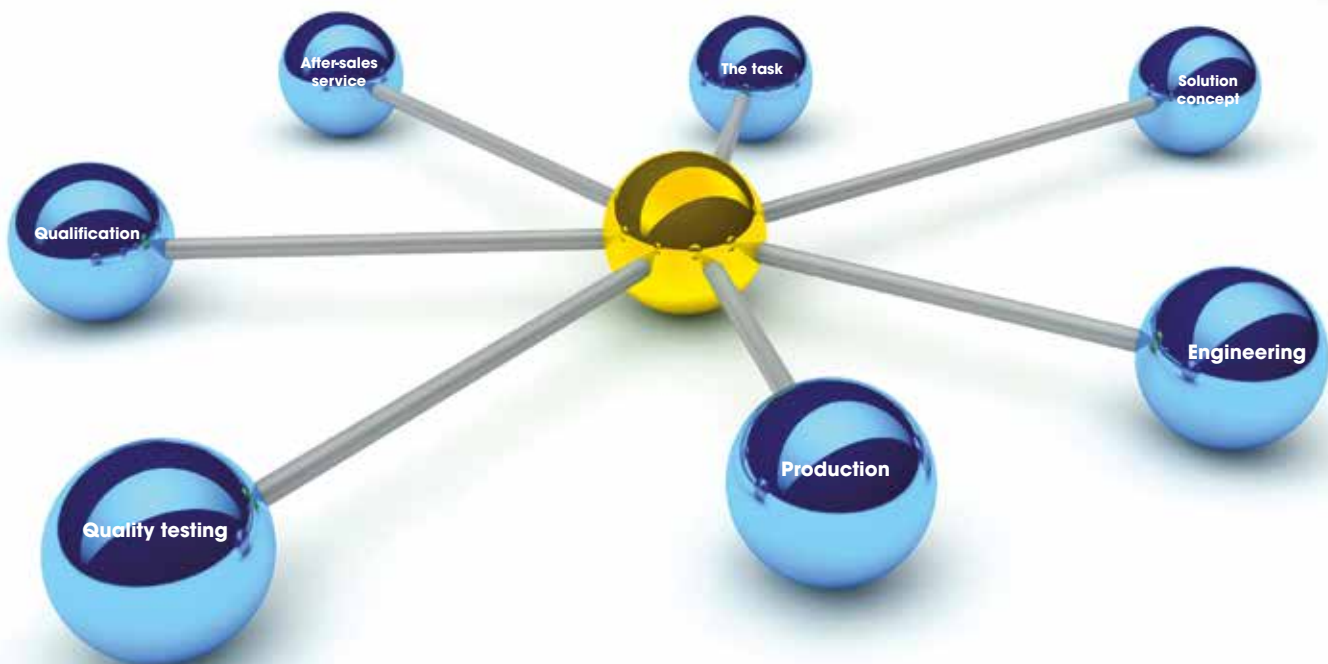
In the field of Biotechnology, Pharma & Cosmetics, customization is usually necessitated by the ever-growing demand of GMP regulations. This is true of the food and beverage segment as well, where products manufactured with the available and proven systems change over time.

If existing plants need to be tailored for new production processes, the possibility of upgrading the "old facility" by replacing components or component parts and adapting it to the new process is first examined. The entire



restructuring of the system is planned and implemented.

Once the new plant or system components are integrated into the daily operations, Esau & Hueber continues to support the partners by providing a complete "After Sales Service".





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