

Criteria for hygienic mixing - Lödige offers comprehensive concepts with designs free of dead space

Machines in food production must meet the highest hygienic standards. But how can these be implemented in practice? Answers are provided by a comprehensive hygienic design that takes into account design details as well as production peripherals and employee behaviour. Lödige therefore not only provides producers with the necessary mixers, it also supports them with decades of practical experience.



Two factors have a decisive influence on the suitability of mixing processes: The choice of suitable materials and the geometric design of the equipment. (Illustrations: © Lödige)

Cleaning-friendly design is the name of the game

Mixing is one of the elementary processes in the food industry. The products consist of a variety of ingredients that have to be introduced in liquid or solid form. Excellent hygiene is required to ensure consistent quality. This makes it all the more important to design the entire system, including all components that come into contact with the product, for easy cleaning. Whether it's washing-in-place, cleaning-in-place or sterilization-in-place: Hygienic execution is only guaranteed if all areas of the system can be reached and wetted by cleaning agents and disinfectants without hindrance.

Concrete specifications for hygienic design

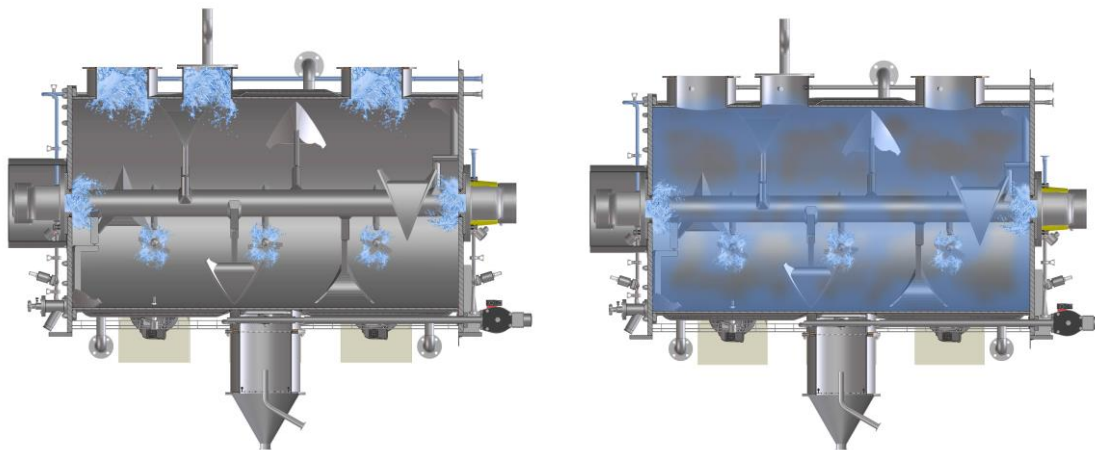
If, on the other hand, the design of the mixer is inadequate, cleaning becomes difficult. Residues can be trapped in gaps, "leading to contamination by microbes and cross-contamination during product changes", explained Lödige sales representative Johann Hoffmann. This makes the selection of a suitable system a challenge for users. To respond to this need, Lödige

therefore develops its mixers according to clear criteria. All models are based on a sophisticated hygienic design and offer manufacturers the possibility to distribute solid or liquid ingredients quickly and homogeneously. The solutions offered guarantee the highest mixing quality with short mixing times from the laboratory scale to the production size and a low-maintenance concept for a long service life and maximum availability," added Lödige sales representative Jan Zernke.

High-quality surfaces are mandatory

Whether it's continuous operation or batch production, mixing or granulating, horizontal or vertical: According to Hoffmann and Zernke, two factors that have a decisive influence on the suitability of hygienic production processes are the choice of suitable materials and the geometric design of the operating equipment. An essential aspect in the design of the systems concerns the execution of the weld seams: "In the mixing chamber, they must be made with the highest possible surface quality to prevent substances from accumulating during mixing," Hoffmann explained.

The same applies to the designs of inner angles and corners: Horizontal surfaces and right angles can result in the accumulation of product residues, and consequently in potential contamination. "System components, such as the seals of doors and flaps, cable ducts, feed-throughs and pipe connection types, must also be available in low-dead-space, hygienic designs," Zernke continued.



Hygienic execution is only guaranteed if all areas of the system can be reached and wetted by cleaning agents and disinfectants without hindrance.

(Illustrations: © Lödige)

Spatial separation from the engine

Good cleanability of the immediate surroundings of the process equipment is another key aspect. Here, for example, the black-white separation is an important factor: "It can prevent the spread of contamination." From a technical point of view, this means, for example, spatially separating the motor driving a mixer or other process-related machine from the machine itself.

The external surfaces of machines and equipment must also be considered in terms of hygienic design. "This means that materials that easily become statically charged should be avoided to counteract the build-up of dust and product residues," said Zernke.

Know-how for safe and compliant products

Guidelines and standards from independent institutes provide information on which features are relevant in the field of hygienic design of equipment for food production. Lödige develops its concepts for mixing plants according to these guidelines and is a member of the European Hygienic Engineering and Design Group (EHEDG), which defines the criteria for a design suitable for cleaning in Europe. The EHEDG carries out certifications and checks, for example, that all surfaces in contact with the product are as smooth and corrosion-resistant as possible so that they do not offer any opportunity for particles and germs to adhere.

Compliance with these guidelines not only ensures conformity with laws and standards, "but also gives manufacturers peace of mind," said Zernke. In order to provide support here, Lödige offers comprehensive post-commissioning support. "In this way, we ensure that production always runs cleanly," Hoffmann added in conclusion.

Additional information and contact

Gebr. Lödige Maschinenbau GmbH
Paderborn, Germany
Johann Hoffmann and Jan Zernke,
Sales Life Science Technology
T.: + 49-(0)7951-400-0 **Falsche Nummer!**
zernke@loedige.de
www.loedige.de