

NETZSCH



System *MAMBO*®

Production of Confectionery Masses



NETZSCH Food & Confectionery – Your Global Partner

Worldwide, NETZSCH supports confectionery mass production initiatives from raw materials to finished product. To ensure the success of your investment, NETZSCH undertakes the planning and implementation of new production lines and trains plant personnel.

NETZSCH Food & Confectionery

- Applications support
- Service
- Modern solutions
- Supervision of test and demonstrations
- Product development and control
- Quality

A modern production

- Fully-enclosed system eliminates risk of external contamination
- Modern Design – ergonomic, hygienic and compact
- Noise reduction and heat savings due to the enclosed housing design
- Quality consistency due to our automated process
- Faster and economic product exchange with low material loss
- Integrated CIP (clean-in-place) system for tanks and piping

Product Development

Our state-of-the-art testing facility offers a full range of capabilities. Here you can test new recipes or optimize the production of existing products. Visit us and experience our know-how for yourself.

Flexibility

Thanks to its modular design, the *MAMBO*® can be configured to your exact requirements and can be easily expanded to the needs of your plant. As an added advantage, cleaning is exceptionally easy and fast, so a formulation can be changed at any time without major effort.

Creativity

In addition to standard filling cream, spreads and compounds the *MAMBO*® can also process specialties such as diet masses or chocolate with different types of sugar and additives. You can also make white products that is true-to-color, fully temperature controlled and with consistent, reproducible quality.

Savings

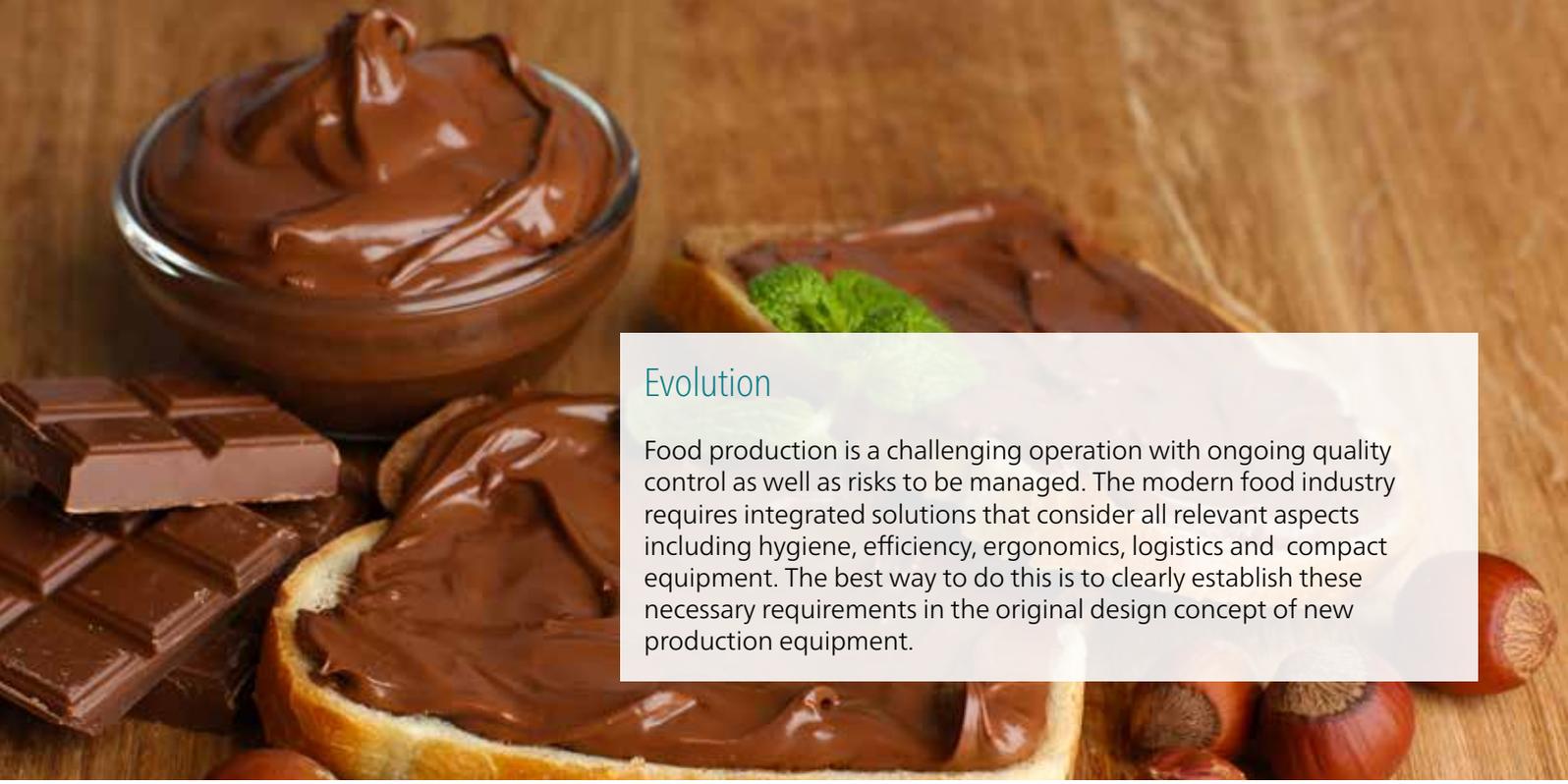
Compared to other systems, *MAMBO*® technology is characterized by reduced requirements for energy, cooling water and space. Considerably shortened processing times are realized as the mixing and refining processes run simultaneously. The *MAMBO*® process also allows you to save time for cleaning and product changes.

Economic efficiency

With our plants, even small batches of standard or special confectionery masses with their own distinctive characteristics can be produced economically. All plants are controlled from an operator terminal. This limits manpower requirements to just material handling.

Quality

With the *MAMBO*® process you will achieve the best reproducibility in a defined automated process. The simple, menu-guided control concept including temperature control allows precise adjustment for your desired quality, with end fineness < 18 µm possible.



Evolution

Food production is a challenging operation with ongoing quality control as well as risks to be managed. The modern food industry requires integrated solutions that consider all relevant aspects including hygiene, efficiency, ergonomics, logistics and compact equipment. The best way to do this is to clearly establish these necessary requirements in the original design concept of new production equipment.

The MAMBO® Concept

NETZSCH Meets the Demand of the Confectionery Industry with the System MAMBO®

MAMBO® is designed to separate the tasks of material handling and production with an innovative, ergonomic and automated design. The totally enclosed housing is pressurized to avoid ingress of any external contamination, provides noise reduction around the equipment as well as the recycling of heat energy within the system in order to save energy necessary to keep all equipment on suitable temperature of process.

Due to its integrated piping and tanks cleaning system there is no need to open or change parts

for regular product or color exchange. The best feature of this System is a unique concept of raw material dosing which allows pre-cleaning of the mixing tank and piping without additional need for extra material besides the product recipe itself.

Due to the optimized combination of mixing, flavor development and continuous refining processes in a very compact layout, a flexible and very efficient line is available for preparation of several types of masses achieving the most demanding quality requirements

Model	Capacity [kg/h]	Space requirement [m ²]
MAMBO® 1000	250 - 500	20
MAMBO® 2000	500 - 1 000	25
MAMBO® 3000	1 000 - 2 000	30



How it is done

The use of noisy, difficult-to-clean and space demanding raw material feeding devices like screw feeders, transporting belts or cup elevators are not needed with the *MAMBO*[®].

Even in the case of bag feeding of powders and melting of fat blocks, the intervention of an operator is minimized and performed under clean and ergonomic conditions.

Dry raw materials are brought in on a pallet and elevated to the feeding station, which has an adjustable height according to the quantity remaining on pallet. The powder feeding station has an exhaust system with automatic cleaning filters, and the fine dust collected does not make contact with the production system; this avoids possible cross contamination and traces of old, accumulated raw material.

The dosing of fats is done via a pump and controlled by weight suitable to the recipe. Here the difference is that the fat of recipe is dosed with high pressure via cleaning heads on top of a mixing tank every time a new batch is complete, pre-cleaning the mixer inner parts and taking accumulated unmixed product to the batch.

A splitting of recipes fat on two or more parts allows final dosing through cleaning heads for the same batch after the mixing is discharged, which gives additional cleaning effect and allows production with very low levels of cross contamination without use of extra rinsing material or fat. The lecithin is dosed automatically via a dosing pump.

Once the mixing is transferred to the process tank, the pipe cleaning

takes place automatically and scrapes as well empties the interconnecting piping. Additives such as aroma can be dosed on specific connectors to the process tank.

According to the product and quality requirements, the process may continue to flavor enhancement with a thin film vacuum device in circulation with the process tank, or straight to the final step with continuous refining of the mass with the famous refiner, NETZSCH *MASTERREFINER*.

Using an integrated pre-grinding system, *SAMBA*[®], and the most energy efficient configuration, the *MASTERREFINER*, refiner can run with the widest fat content range and achieve the most demanding quality requirements such as fineness or low temperatures.

Quality with Flexibility

Modular System

The *MAMBO*® is a compact system with an enclosed design with special focus on hygiene and human engineering.

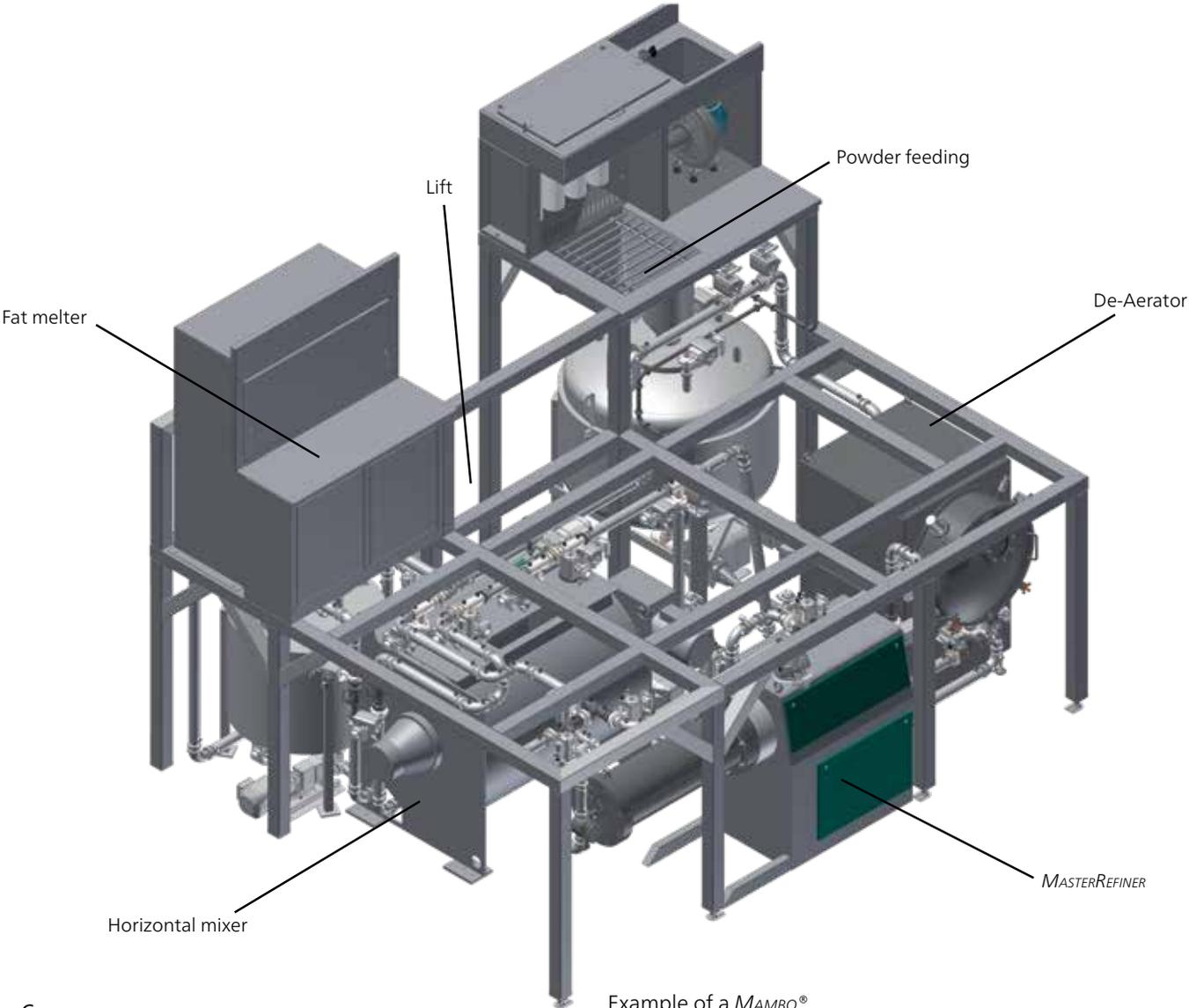
The compact two-level arrangement of the components provides a space-saving layout. An integrated lift separates the raw material storage from the raw material processing.

Thanks to the ergonomic design and the integrated lift, which alleviates transport of the raw materials, the plant can be operated from the upper work level and the material fed through the integrated raw material feed.

Due to the optimized design of the feed system, the *MAMBO*® shows hardly any cross mixing in the raw material feed.

This results in a better product safety. The areas of raw material feed and product are strictly separated from one another.

This fact limits the dust entry to the actual area concerned. The integrated and fully-automated *MAMBO*® cleaning system allows fast product changes without additional time or cleaning liquid.



Example of a *MAMBO*®

Cleaning System

Increasing demand of product variety and optimization of costs of production require more flexible lines that can work under wide range of parameters and adapt to new conditions in short time.

This situation means also that more and frequent exchange of product is needed.

Some problems are associated with this, such as cross contamination, work and material intensive procedures in order to allow the change of product without quality issues, concern about possible residual in the system and impact on product safety for specific consumers such as diet products.

Large amounts of rinsing fat and long times required for opening,

dismantling and cleaning line components for the product exchange are common in existing lines.

This means for less critical product exchange some compromise is needed and higher cross contamination level is accepted in order to avoid higher costs and time factors.

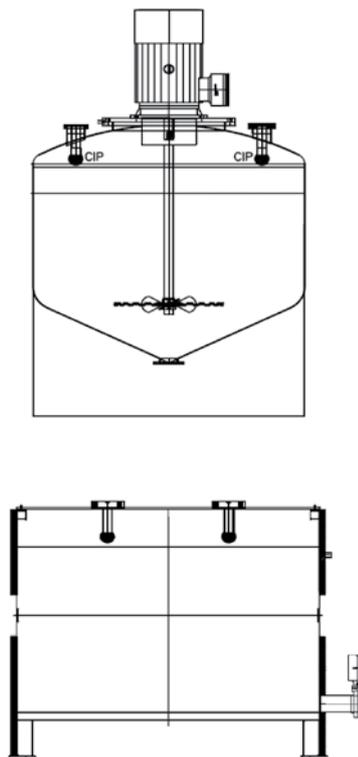
The *MAMBO*[®] cleaning system allows faster product exchange with low usage of cleaning liquid and shorter time.

The concept of raw materials feeding and automatic pipe cleaning after product transfer in the System *MAMBO*[®] makes this task much easier and avoids residual accumulation in the System without additional time or use of any cleaning liquid.

The scope of *MAMBO*[®] cleaning system: storage tank for cleaning fat, cleaning heads, pigging system in pipeline, pumps and automatic sequence of raw material dosing.

The cleaning cycle takes place in automatic modus according customer needs and follows the line of process in chain through high flow liquid dosing, circulation period and transference or discharge.

Thanks to the intelligent raw material dosing sequence the System has no significant product accumulation, which contributes to shorter cleaning cycle time and lower volume of liquid. For example, depending on line size, 50 to 100 Liters can be stored on the dedicated tank and reemployed according product type and customer criteria.



Cleaning system components – cleaning heads and pigging system

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