

Economical mixing processes
thanks to Gericke batch
mixer GBM

Gericke

Powder Processing Equipment and Systems



Mixing in batches ...

Mixing is a central operation in process engineering. This brochure presents the horizontal single-shaft mixer, GBM. The GBM is a high-performance universal mixer and is manufactured as a paddle, ploughshare or spiral strip mixer.

Gericke mixers create high-quality intermediate and end products with the highest homogeneity. As a specialist, Gericke also masters related processes such as agglomerating, granulating, coating as well as heat transfer for innovative products.

„Mixing is a transport process in which random particle exchange (dispersion) and targeted division and blending (confection) achieves a homogeneous mixture. Both the mixing time and the required levels of energy are essential criteria when it comes to achieve economical mixing processes.“

DR. RALF WEINEKÖTTER, MANAGING DIRECTOR GERICKE AG, SWITZERLAND

Gericke offers also equipment for continuous mixing processes as well as batch mixers for gentle mixing. For separate information material please ask your local Gericke representative.



The mixer for your process ...

Gericke GBM batch mixer are used for mixing of solids with two or more components.

Food industry

- Cereals
- Coffee mixtures
- Bakery ingredients
- Instant soups
- Sugar mixtures
- Muesli
- Iced Tea
- Sports nutrition
- Spices
- Dessert mixtures

Environmental industry

- Catalytic converters
- Filters

Animal nutrition

- Dry feed for dogs and cats
- Feed mixtures for small animals
- Concentrated feed
- Fish feed

Plastics industry

- Masterbatch
- Pigments

Chemistry

- Plant protection products
- Fertilizers
- Chemical intermediates
- Flame retardants
- Powder coatings
- Premixes for the construction chemicals



The Gericke GBM single-shaft mixer reveals its strengths with the following requirements:

- Different product properties
- Specific energy input
- Intensive application of additives
- Preventing stippling and agglomerations
- Breaking down nodules, clumps and fibre clusters
- Thermal check
- Blanketing with inert gases
- Wet products



GBM - Gericke batch mixer ...

High mixing quality

Eight mixing tools have optimised shape and geometry, and lead to a powerful flow through the mixing chamber.

Greater throughput thanks to a short mixing time

Optimum configuration of the mixer housing and paddle shape as well as the favourable positioning of the infeed ducts for micro-components mean the mixing process is three to four times shorter than in comparable devices.

Flexible process configuration

A reproducible mixing quality can be guaranteed efficiently and without deterioration of the mixed materials through the combination of matching drive packages and the particular mixing chamber geometry.

| Type | Mixer volume [l] | Useful volume [l] | Power [kW] |
|----------|------------------|-------------------|------------|
| GBM 200 | 200 | 50 - 160 | 2.5 |
| GBM 450 | 450 | 100-320 | 4 |
| GBM 900 | 900 | 200-620 | 7.5 |
| GBM 1500 | 1500 | 400-1200 | 15 |
| GBM 2300 | 2300 | 550-1600 | 22 |
| GBM 3000 | 3000 | 750-2200 | 28 |
| GBM 5000 | 5000 | 1200-3500 | 55 |
| GBM 6000 | 6000 | 1500-4400 | 75 |

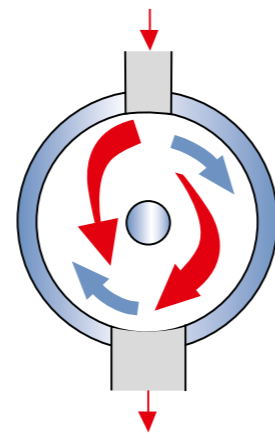
Energy efficiency

A required mixing volume can be mixed without deterioration, although requiring less energy. As a result, the GBM helps to save energy

Safety

The safety of the operator and the process is of key importance. The GBM mixer is designed according to FDA and EHEDG guidelines, and can be supplied for ATEX zones 20 indoors and 22 outdoors.

All seals are according the standards of FDA and EN 1935/2004. The mixer is desinged to suit the EHEDG directives.



GBM working principle
 — Rotation of the mixing tools
 — Product streams in the mixing chamber



GBM - more functions because of unique solutions ...

Modular design for the appropriate mixer

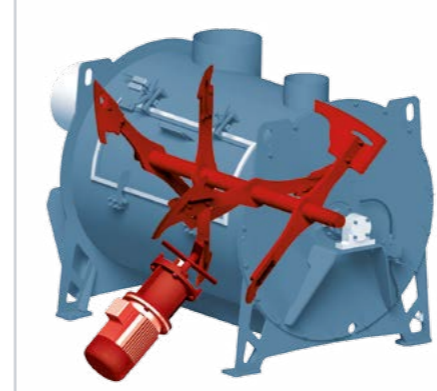
The GBM single-shaft mixer has been designed on the basis of more than 100 years of experience in building mixers. The modular design ensures the best possible adaptation to the requirements of the process. The GBM series offers impressive processing, flexibility and reliability.

Process flexibility by interchangeable mixing tools

Bolt-on mixing paddles are used in the standard version. Optionally, the GBM mixer can also be equipped with ploughshares or a spiral strip. The paddles can also be exchanged subsequently.



The mixing shaft can be equipped with different mixing tools.



Avoiding of lumps and agglomerates

The new designed lump breaker with its - for horizontal shaft mixers - unique effective circular diameter brings the product to the right particle size.

Complete emptying

The residual quantity in the mixer varies from 0.1 - 0.2% of the net volume, depending on the size of the mixer. The increased number of paddles and optimum outlet concept mean that the shortest emptying times are achieved.

Quality and performance

The GBM series offers impressive processing and reliability. Attention has also been paid to ensuring that the control elements are comfortable for operators to use. The mixer concept has been completely redesigned, and impresses as a package with a top price/performance ratio that is unmatched by any other machine.



Extra long cutter blades resolve very efficient lumps and agglomerates.

- High throughput
- Constant homogeneity
- Low maintenance costs
- Feeding and composition weighing by Gericke
- Worldwide consultation and service
- Certified in accordance with ISO 9001

Quick cleaning and straightforward maintenance ...

Service, maintenance and cleaning

Avoiding dead spaces was an important principle of the design of the mixing tools, interior and outlets.

A generously sized service opening ensures that service and cleaning personnel have the access that they need. Maintenance work can be carried out quickly and efficiently.

Different variants for shaft seals

Reliable seals reduce dust emissions, reduce maintenance and cleaning! Three concepts are available:

- Packing gland
- Flushing air
- Barrier air

The seal packs can easily be cleaned and changed from the outside.

Cleaning doors

The mixer is supplied with a very large, leak-tight cleaning and service door on the side. The unique seal concept guarantees shortest service time and easiest handling.

Outlet

Two versions of the outlet flap are available.

Round (standard): Hygienic processes, fast cleaning. Connection to Quickflexsleeves possible.

Rectangular: quick and complete emptying. The residual quantity varies from 0.1 – 0.2% of the net volume, depending on the size of the mixer.

Standard version: 1.4301, glass bead-blasted on inside and outside. Execution in other steels are available.



Large side doors allow fast and easy cleaning.

The shaft seals are available with flushing or barrier air.

Economic processes ...

Product infeed

- Gericke sack tipping and big bag discharge stations enable an easy and dust-free infeed of products into the systems.

Product preparation

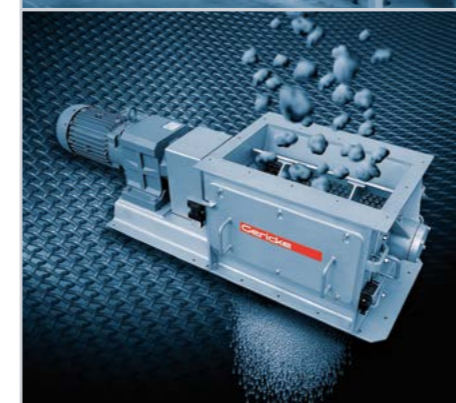
- The Gericke Nibbler and Cone Mill grinding devices break up agglomerates and lumps before the product is fed into the mixing process.
- Gericke sifters control particle size and remove foreign bodies.

Product dosing

- Gericke feeders dose the components into the mixer by weight (gravimetric feeder) or volume (volumetric feeder).
- Gericke feeders are suitable for use in various industries and are designed for throughputs from 0.2 to 50,000 litres per hour.

Product conveying

- The pneumatic conveying systems transport the individual components to the mixer.
- Due to their segregation-free, dense phase flow design, Gericke conveying systems are also suitable for transporting ready-mixed products to subsequent process units.
- The range of products includes pressure and suction conveying systems for short distances of up to several hundred meters.





From the test centre to the perfect mixer ...

Tests carried out in the Gericke Test Centre are the basis for choosing the right mixer, as it is here that the client's product is tested under real conditions. The knowledge gained as a result of this process reduces the duration of the planning phase and increases the security of the investment.

Other components eligible for the process, such as feeders and pneumatic conveying systems, can also be tested at the same time.

Rental units

If you would like to test the performance of a Gericke mixer in connection with your existing system, it is possible to integrate a rental unit directly into your on-site production processes.

Service

Our experienced service engineers are on hand worldwide, allowing you to achieve the highest possible cost-effectiveness of your processes.

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