

Leading Edge Powder Processing Technology

Gericke

SYSTEMS AND MACHINES FOR BULK MATERIAL PROCESSES

Conveying / Feeding / Mixing / Size Reduction / Sieving / Automation



LEADING EDGE POWDER PROCESSING TECHNOLOGY SINCE 1894

The team

The company is an independent family-run business. Markus H. Gericke runs the group and is a fourth-generation family member. He is supported by a strong global team. Reliability and creativity to provide new solutions are among the values our company embodies.

Experience

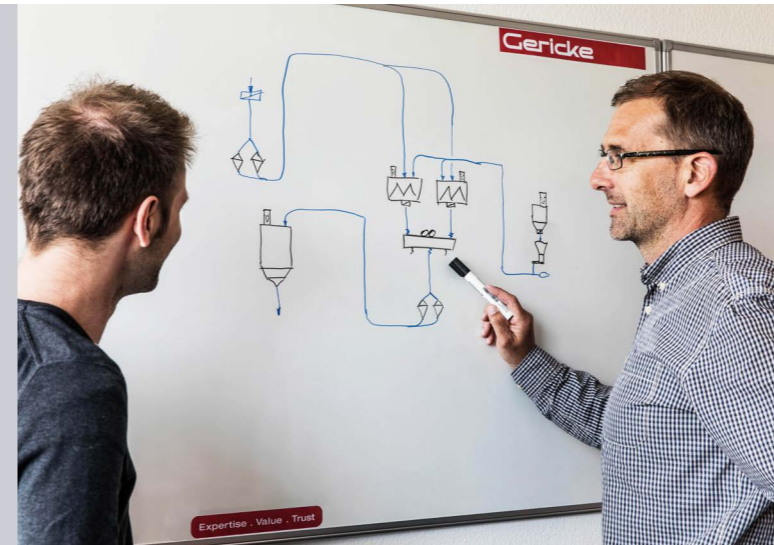
Gericke was founded by mill-master builder, Walther H. Gericke, in Zurich (Switzerland) in 1894. Since then, our core activities have been the manufacturing of machines and systems for modern bulk materials processes as well as the associated advice and competent service provision.

Our proximity to customers

Gericke is headquartered in Switzerland. However, we have a direct presence in many countries. This allows us to maintain close customer contact using our dense network of trained and specialised engineers. With more than 300 committed employees in our group, we have realised projects in almost all the countries of the world.

Our group companies have significant independence in all corporate matters and use their extensive engineering know-how to plan, create and deliver complex turnkey systems. Customers benefit from locally provided goods and services. This includes our local suppliers. Partners with knowledge of the local industries complete the Gericke Network.

Expertise . Value . Trust



Gericke is there for you worldwide!

Be it for the food industry, pharmaceutical or chemical industries – Gericke technology is spread across the globe.



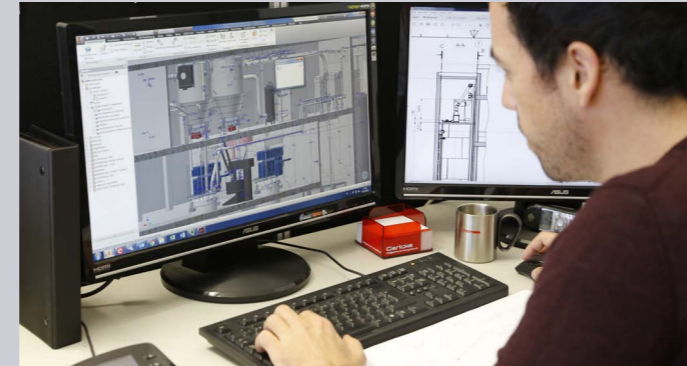
Bulk handling technology at its finest

“Made by Gericke” means a quicker “Return on Investment”, low maintenance costs and high system availability.



POWDER HANDLING

Safe, emission-free and efficient: GERICKE takes care of material reception, quality check and internal conveying of bulk solids to the various points of processing.



ENGINEERING

Save time and money with competent engineering and project management! This also covers risk assessment, product safety and energy efficiency.



GLOBAL SERVICE AND SUPPORT

We speak your language! With our global network of subsidiaries and partners, we are always within easy reach for maintenance, training and performance tests, saving you time and travel costs.

POWDER PROCESSING

Value creation takes place with our solutions for particle size control, feeding and mixing, made by GERICKE, since 1894.

AUTOMATION SOLUTIONS

We enable lean operation of your powder processes: Full process integration, PLC programming, visualisation, recipe management and communication to your MES and ERP environment.

Food

- Milk powder, milk products
- Baking mixes
- Chocolate
- Muesli
- Beverages

Chemicals

- Flavours
- Chemical raw materials
- Paints, lacquer
- Fine chemicals
- Laundry detergent
- Crop protection agents

Animal feed / pet food

- Concentrated feed
- Vitamin blends
- Fish food

Pharmaceuticals and cosmetics

- Pharmaceuticals
- Cosmetics
- Vitamins

Plastics

- Master batch
- Extruder feeding
- Storage and delivery

Utilities

- Filter dust transport
- Transport of sewage sludge granules
- Water treatment

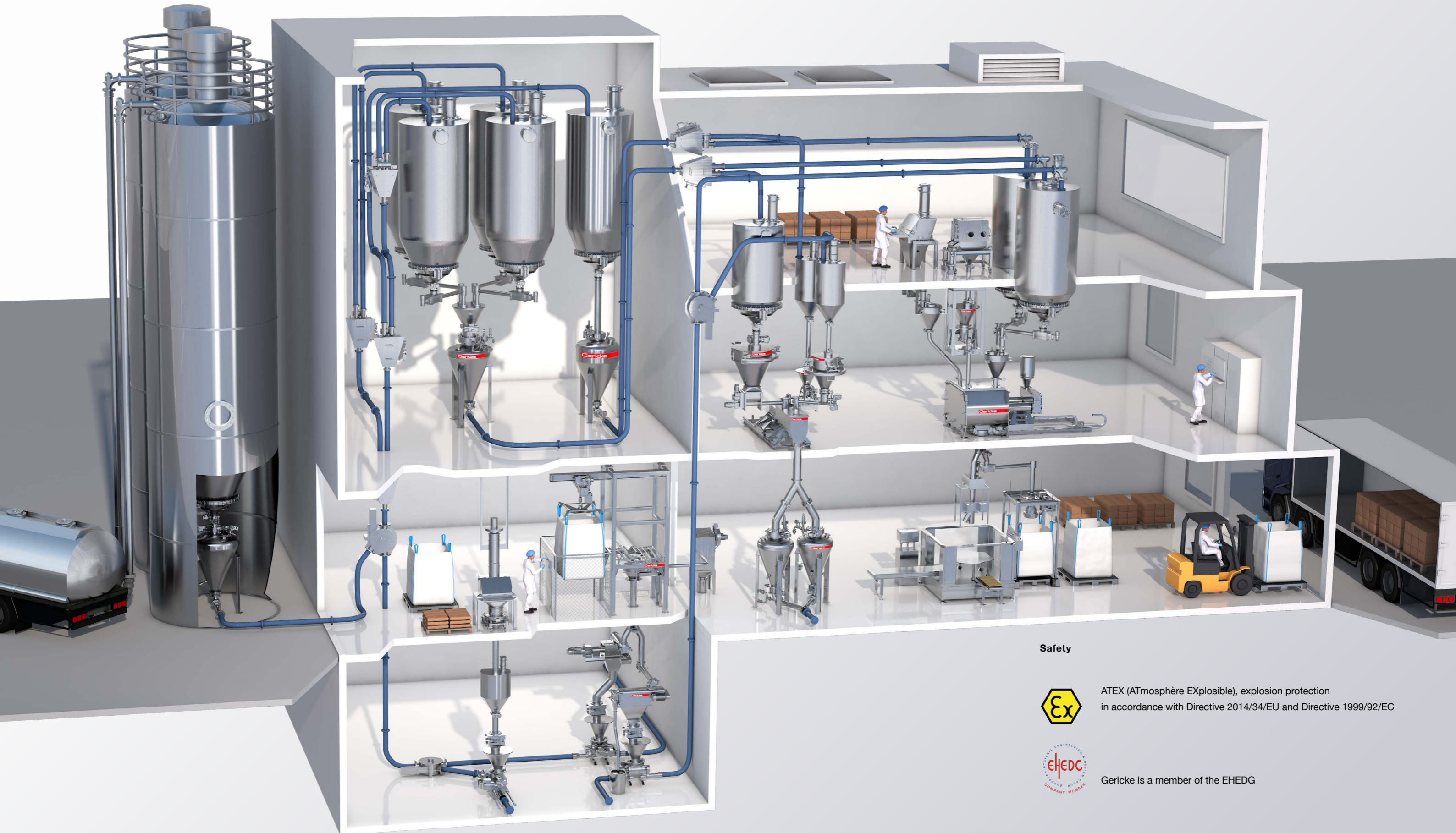
Construction materials

- Plasters
- Adhesives
- Plasterboard

Automotive

- Particulate filters
- Catalytic converters
- Brake pads and clutch linings
- Batteries

YOUR GLOBAL PARTNER FOR TURNKEY SOLUTIONS



Safety



ATEX (ATMOSPHERE EXPLoSIBLE), explosion protection
in accordance with Directive 2014/34/EU and Directive 1999/92/EC



Gericke is a member of the EHEDG

SAVE TIME AND MONEY WITH OUR ENGINEERING AND PROJECT MANAGEMENT

Planning phase

In this phase the focus is on the elaboration of the correct process solution and selection of appropriate machinery.

- New systems or modernisation and expansion of existing systems
- Search for solutions and evaluation of variants
- Performance of tests in our test centres and laboratories
- Specification of the process technology and output statement
- Costing and time planning
- Determination of the cost basis for investment calculations

Engineering phase

In detailed layout planning, we develop 3D models including installation and assembly drawings. Risk assessments in the planning, implementation and operation phase play an important part.

- Project management
- Risk analysis
- EX concept
- Automation, control
- Qualification, validation
- Documentation

Implementation phase and handover

During the assembly phase, the service team takes over the lead on the construction site. The key tasks are the assembly and installation supervision, leadership of the assembly teams, co-ordination of logistics and implementation of safety on the construction site. During commissioning of the system, trials and test runs of the individual units and the control are performed, then the automation is checked in a system test, followed by a test with product and finally testing of the complete process.

- Site supervision
- Assembly
- Commissioning
- Maintenance concepts
- Training of local personnel

Expertise . Value . Trust



FROM MACHINE CONTROLLER TO IoT

Automation solutions

Gericke advises, develops and supplies automation and control solutions that integrate the latest standards and provide suitable visualisation and traceable recipe management. By combining extensive powder processing expertise with sound digital technology, we enable you to reach high OEE (Overall Equipment Effectiveness) values. We place great emphasis on simple and clear user guidance that simplifies monitoring and control of the system. This will allow you to have a single contact for the entire project.

OEE=Overall Equipment Effectiveness

Calculated by multiplying availability, performance and quality, it shapes a picture of how effectively a manufacturing process is running.

Planning phase

- Description of the scope of automation
- Analysis of data management system
- Selection of machine controllers
- Architecture of MCC, Field control level, Process base
- Specification of the process technology and output statement
- Security design
- Costing and time planning

Engineering phase

- Detailed engineering of the electrical plan, functional diagrams and user interfaces
- FDS
- Electrical Planning
- Compiling of electrical and cabinet drawing
- Programming of interface
- Programming of PLC
- Qualification, validation concept
- Documentation

Implementation phase and handover

- Cabinet assembly and electrical wiring.
- Automation is checked in a system test, followed by a test with product and finally testing of the complete process.
- Commissioning
- Training of local personnel
- Maintenance and update concepts



CONVEYING GOODS-IN AND DELIVERIES

Dust-free delivery of products to process lines is desirable for both hygienic reasons and on grounds of contamination-protection and explosive-protection. Gericke supplies ergonomically designed sack tip stations and big-bag emptying stations with the associated supply and removal systems for the containers.

BBU Big Bag Unloader®

- Various designs for safe loading, filling and handling of big-bags.
- Filling units with integrated scales and roller conveyors for onward transport of the filled bags.

Sack tip station

- Ergonomically designed Sack tip stations with integrated sieving devices, magnets and nibblers for crushing agglomerates.
- The built-in or centrally placed filters ensure a clean and safe working environment.



Dense phase conveying

- Gentle conveying prevents abrasion, increase of bulk density and disintegration of particles.
- Slow conveying speeds of plugs and strands between 3 and 15 m/s.
- PulseLine system with automatic control of the conveying air supply.
- Up to 80 m³/h and transport lengths of up to 400 m.

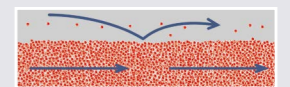
Distinguishing features of pneumatic conveying systems:

- Concentration (μ): Indicator for the loading efficiency in the pipeline
- Speed: The load of the conveyed material increases to the cubed power of the conveying speed
- Vacuum or pressure: Types of process design of a pneumatic conveying system
- Product discharge in the pipeline: Using transmitters or locks for optimal introduction of the bulk solids into the pipeline and as pressure differential barriers

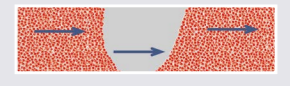
Dilute (in flight)



DenseFlow (layer)



PulseFlow (plug)



PulseLine (plug)



Tanker emptying

- Mobile loading systems for gentle and energy-efficient unloading of tanker trucks.



Vacuum conveying

- Compact system for shorter transport distances and lifts.
- Conveying products from barrels, big-bags or sack tip stations.
- Can be used for refilling of loss in weight feeders.
- Usable as vacuum scale.
- Universal conveying systems with rotary valves can be designed as pressure or vacuum conveyors. Pressure-shock resistant and flame-proof.

Rotary valves

- For pressure and vacuum conveying.
- Extractable hygiene versions and wear-resistant components are available in our range.



Pipe diverters

- Diverter valves with diametres up to 300 mm.

Pipe bends

- Significant reduction of pipe wear and prevention of angel hair formation thanks to a patented diverter chamber which reduces turbulence and friction.



FEEDING

Volumetric feeders

- The bulk material is fed volumetrically using a feeding spiral or screw.
- Agitators prevent bridge formation and ensure homogeneous supply of the bulk materials into the feeding tool.



Volumetric feeding



Feeding capacity depends on volume transport per unit of time.

Loss in weight feeders

- For continuous gravimetrically-controlled feeding of extruders, kneading machines or continuous mixers. As a batch-scale for weighing products.
- The Easydos controller can be used flexibly for all feeding devices and modes.



Gravimetric feeding



The feeding flow or the batch is recorded and controlled by weight.

Not all powders, granulates or fibres behave in the same way. Gericke's feeders can be precisely adjusted to suit the characteristics. For example:

- Feeding of raisins, cherries and dried fruits
- Feeding into tumblers for coating substrates
- Feeding in furnaces with a long spiral
- Feeding SAP (super-absorbent polymer)
- Feeding liquids (using a pump or spiral)
- Filling egg yolk powder

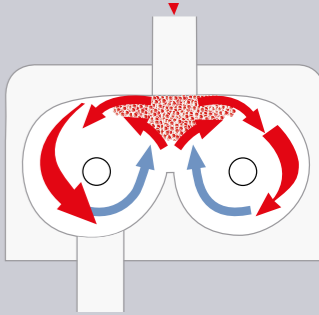
Gericke feeding devices are available with 0.2 to 50,000 l/h



MIXING

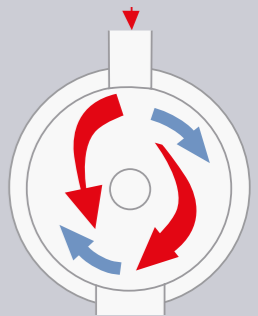
GMS Multiflux® batch mixer

- Batch mixers. Horizontally oriented, twin-shaft mixer with optimal product flow in the fluidised bed zone.
- Lower energy input resulting in gentle mixing of sensitive products with maximum mixing homogeneity.
- Model series for batch sizes from 80 to 4,000 litres.



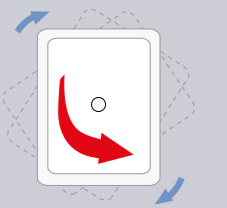
GBM Single-shaft mixer

- Batch mixers. Horizontally-oriented mixing tool.
- Universally usable mixer with low to medium energy input. Model series for batch sizes from 40 to 4,000 litres.



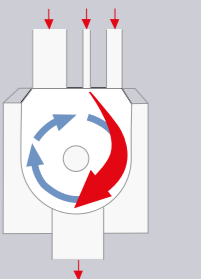
GDM Drum mixer (Mixomat)

- Batch mixers. Drum mixers for simple mixing tasks in laboratories or production systems.
- Drum sizes of between 30 and 400 litres.



GCM Continuous mixer

- The mixer is suitable for a wide range of powders, flakes, granules and viscous products.
- Spraying with liquids and thermal processes are very effective.
- Easy to clean. The GCM is suitable for very difficult mixing tasks.



Our mixers produce high-quality intermediate or final products with the highest level of homogeneity. As a specialist, Gericke also masters the related processes such as agglomeration, granulation, jacketing as well as heat transfer. These are essential for innovative products. The process can be carried out continuously or as a batch variant.

SIZE REDUCTION AND SIFTING

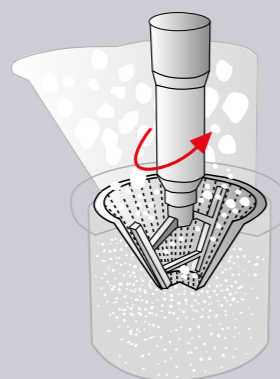
NB & NBS Nibbler

- Nibblers loosen clumps and the agglomerates effectively using graters and rotating paddles.
- The grater openings vary from 1 to 25 mm. Throughput rates of up to 20 m³/h.



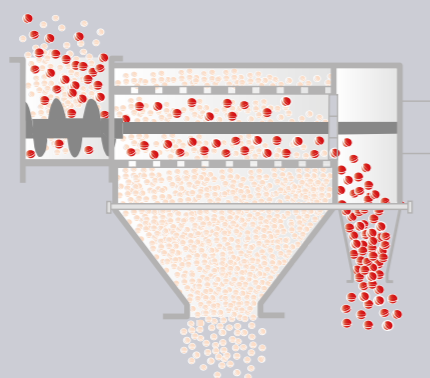
GCN Cone Mill

- Gericke Cone Mills have a vertically-rotating beater.
- The hole openings in the conical sieve insert vary from 50 to 2,000 µm.



GS Centrifugal sifting station

- Control sifting, classification and foreign body ejection.
- GS Sifters are located either after the raw material reception or directly before the filling systems.
- Inline sifters can be integrated into pneumatic conveying systems.
- The mesh size is between 50 and 4,000 µm.
- Depending on the type of machine, capacities of up to 125 m³/h can be achieved.



PHARMACEUTICAL PROCESSES

GFS Formulation skid

Our continuous feeding and blending modules for the production of oral solid dosage forms ensure the homogeneous blending of up to 6 excipients and APIs. They can be used as stand-alone units for formulation development or easily integrated with the following processes:

- Direct compression
- Dry or Wet granulation
- Hot melt extrusion
- Sachet or capsule filling

The achievable throughput range is large and lies between 1-1,000 kg/h. This allows for the use from formulation development to commercial production without scale-up.

The compact modules combine up to 6 high-precision gravimetric feeders with refilling and a continuous blender into a single process step. PAT sensors are an integral part. The modern automation architecture allows the system to be modularised, e.g. by replacing individual feeders, in order to adapt the system to the requirements of different formulations, whilst still maintaining GMP compliance.



Feeding, mixing and size reduction applications

Gericke solutions have been used in various pharmaceutical applications for many years. Special competencies are the supply of the following:

- Solid feed systems for infusion solutions
- Closed filling of reactors in the manufacture of active ingredients
- Batch mixers
- Size reduction and filling equipment



GERICKE TEST CENTRES



GERICKE TEST CENTRES OFFER THE FOLLOWING SERVICES

- Testing of machines and prototypes using original products
- Testing the performance ranges and accuracies
- Testing the interaction between several machines
- Gaining experience of product processing
- Sampling for laboratory testing and market response
- Service training (Inspection, disassembly, cleaning, assembly)
- Complete Gericke machine ranges available for tests

Advantages

- Determine the optimal machines and setting
- Process engineering tests
- Determining process limits
- Design of process management
- Comparison of various design variants
- Help validate the investment case
- Create security for the investment decision
- Individual support and advice from Gericke experts
- Knowledge transfer

Results

- Risk minimisation thanks to key components being tested and performance limits being determined
- Shorter engineering phases, as process variants can be tested with complete Gericke systems
- Acceleration of your innovation projects





GERICKE SERVICE

Worldwide support for commissioning, maintenance and servicing requirements.

At Gericke, we place great importance on timely delivery, reliable assembly and conscientious assembly monitoring. With the scheduled commissioning and intensive on-site training, we achieve the requirements

for a smooth production start. Our Service Team and the global spare-parts service ensure a long service life and availability of the systems while maintaining product quality.

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