

Leading Edge Powder Processing Technology

Gericke

SYSTEMS AND MACHINES FOR BULK MATERIAL PROCESSES

Supply / Feeding / Mixing / Crushing / Sieving / Automation



BULK HANDLING TECHNOLOGY SINCE 1894

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

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 the company was founded, manufacturing machines and systems for modern bulk material processes as well as the associated advice and competent service provision, have been our core activities.

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 extensive 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.



Gericke is there for you worldwide!

Be it for the food industry, pharmaceutical or chemical industries – bulk handling technology from Gericke 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. Our core competencies include:

- Engineering and automation
- Unloading tankers, big-bags or sacks
- Control sieves, dissolving agglomerates, crushing
- Supplying, conveying
- Feeding and weighing recipes
- Mixing
- Filling

SYSTEM

Custom-made system

Planning, manufacture, assembly and commissioning of complete systems are tailored by Gericke to meet the customer's needs and the bulk solids used. Experiments and trials in our technical centres support the choice of components used and the design of the processes. Consistent project management and complete documentation are key to successful projects at Gericke.



Investment with security

Gericke designs every processing step with ease of use, occupational safety and operational reliability in mind. PLC control and visualisation simplify operation and monitoring of the production systems. Gericke is known for its durable and robust technology which ensures a high level of system efficiency.



AUTOMATION

Automation and Electrical Engineering

Our knowledge of the fundamental processes of feeding, mixing and conveying together with our competence in electrical engineering and automation make us the ideal partner to supply the full system. We work together with long term partners in the field of automation in order to best support our customers.

Besides the automation and visualisation of an entire plant, Gericke offers machine controllers for gravimetric feeding as well as for pneumatic conveying. These devices save programming costs and reduce the start-up time. They allow you to run a machine independently and can communicate with a PLC using various field buses.



Food industry

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

Chemicals

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

Pharmaceuticals and cosmetics

- Pharmaceuticals
- Cosmetics
- Vitamins

Construction materials industry

- Plasters
- Adhesives
- Plasterboard

Automotive industry

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

Animal feed / pet food

- Concentrated feed
- Vitamin blends
- Fish food

Utilities

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

Plastics

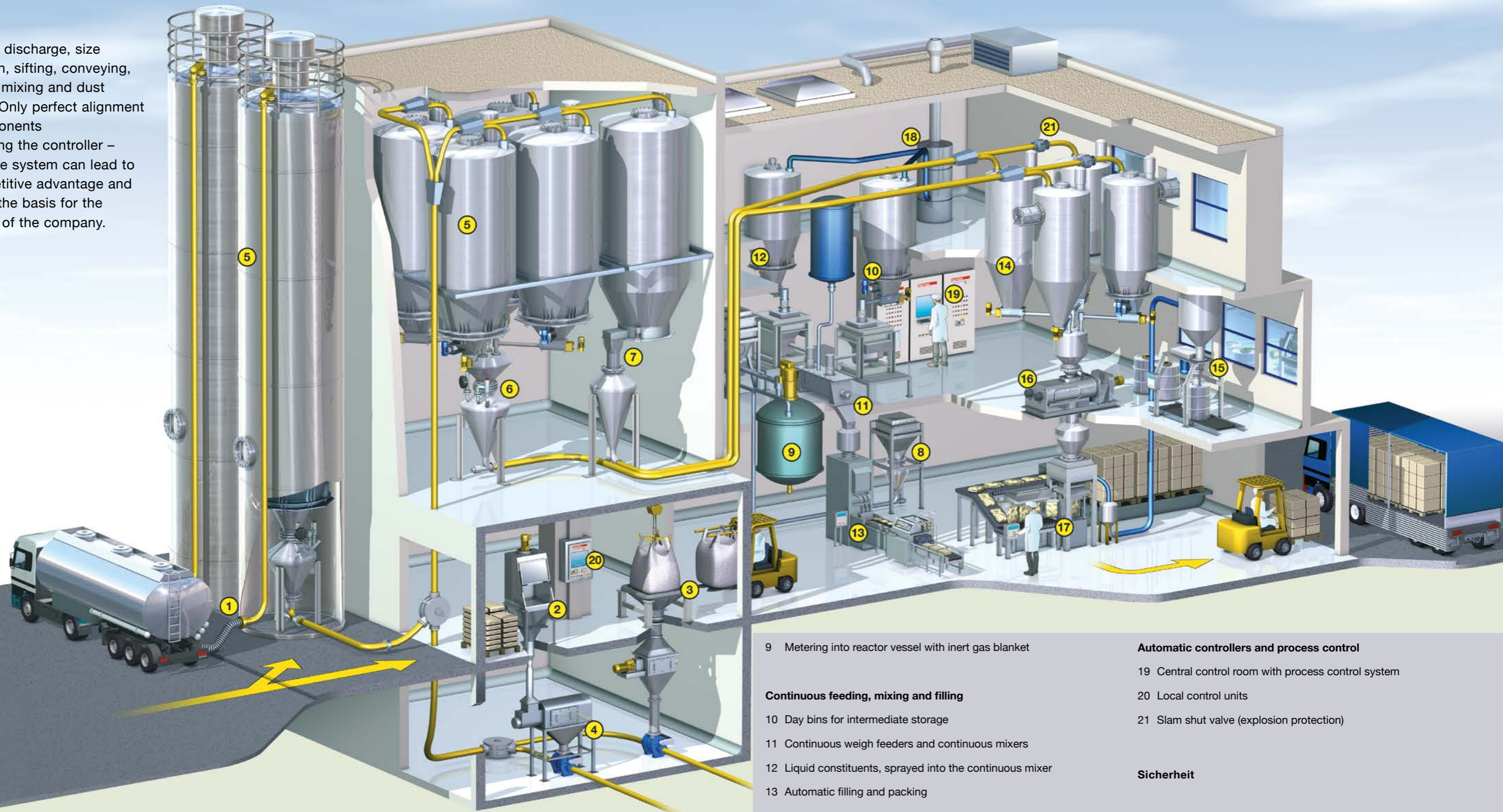
- Master batch
- Extruder feeding
- Storage and delivery



Brochures for the various industries are available for download on our website.



Storage, discharge, size reduction, sifting, conveying, feeding, mixing and dust control. Only perfect alignment of components - including the controller - within the system can lead to a competitive advantage and provide the basis for the success of the company.



Acceptance and storage of raw materials

- 1 Unloading of materials from road vehicle into silos
- 2 Sack emptying station with compactor for empty sacks
- 3 Discharging of raw materials from container or big bags
- 4 Pneumatic lean phase conveying after screen (left) or delumper (right) into storage silos

5 Storage silos for large components

- 6 Pneumatic dense phase conveying into day bins
- 7 RA discharge device and feeder for poor-flowing materials

Loading of stirrer vessels (reactors)

- 8 Dust-free emptying of container

9 Metering into reactor vessel with inert gas blanket

Continuous feeding, mixing and filling

- 10 Day bins for intermediate storage
- 11 Continuous weigh feeders and continuous mixers
- 12 Liquid constituents, sprayed into the continuous mixer
- 13 Automatic filling and packing


Weighing and mixing of individual components in batches followed by filling and packing


- 14 Day bins with feeders and weighing vessels
- 15 Grinding of rework in the GCN (Gerick Cone Nibbler/Cone Mill)
- 16 Gentle mixing in the GMS (Multiflux® Batch Mixer)
- 17 Automatic sack filling unit and palletising Dust removal
- 18 Centralised or local dust filters


Automatic controllers and process control

- 19 Central control room with process control system
- 20 Local control units
- 21 Slam shut valve (explosion protection)

Sicherheit

 ATEX (ATmosphère EXplosible), explosion protection in accordance with Directive 94/9 EC and Directive 1999/92/EC

 ISO 9001 : 2015 guarantees consistent quality

 Gericke is member of EHEDG

GERICKE TEST CENTRES



Our customers can use various test centres in Switzerland, France, England and Singapore for production-related trials. The Test Centres are fitted with original machines. Experienced specialists design the trials according to your wishes and perform these tests. A milestone on the way to successful innovations!

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



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.

Big-bag emptying and filling stations

- 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 stations

- 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.

Tanker emptying

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

Application and supply

- Rotary valves for pressure and vacuum conveying.
- Extendible hygiene versions and wear-resistant components are available in our range.



Dense phase conveying

- Gentle pressure conveying avoids abrasion, increases bulk density and destruction of the particles.
- Slow conveying speeds of plugs and strands between 3 and 15 m/s.
- Pulse-line system with automatic control of the conveying air supply.
- Up to 80 m³/h and transport lengths of up to 400 m.

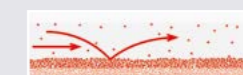
Distinguishing features of pneumatic conveying systems:

- 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 transmitter or locks for optimal introduction of the bulk solids into the pipeline and as pressure differential barriers

Blown conveying



Dilute phase conveying



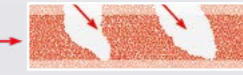
Dune conveying



Plug conveying



„PulseLine“ PTA PL



Vacuum conveying

- Compact system for shorter transport distances and lifts. Conveying products from barrels, big-bags or sack tip stations. Can be used for filling differential feeding plants or as a vacuum scale.
- Universal conveying systems with rotary valves can be designed as pressure or vacuum conveyors. Pressure-shock resistant and flame-proof.

Pipe diverters

- Rotary valves, rotary tubes and diverter valves.
- Diameters 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 feeding devices

- 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

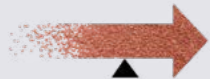


Feeding capacity depends on Volume transport per unit of time.

Loss in weight feeder

- 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.

No powder, granulate 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)
- Filling egg yolk powder
- Feeding liquids (using a pump or spiral)

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



Belt scales

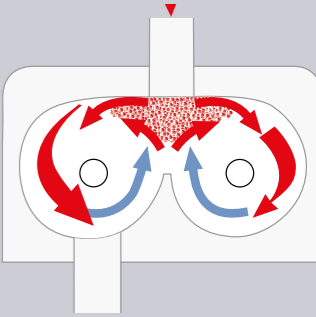
- Belt scale for continuous weighing (feed belt scale) or registration (registration belt scale) of bulk solids.
- The bulk solid running over the belt is weighed over a defined measuring distance, calculated and controlled in the feeding.



MIXING

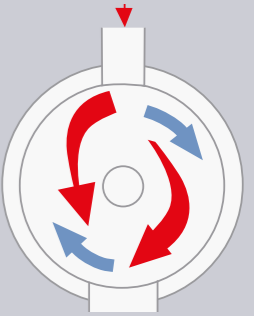
GMS Multi-flow fluid mixer

- 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.



GMB 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.



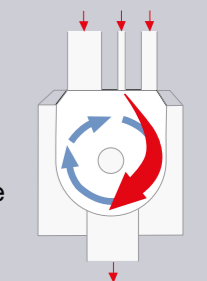
GDM drum mixer (Mixomat)

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



GCM Conti-mixer

- Mixer for continuous processes. 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 loosens clumps and agglomerates effectively using graters and rotating paddles.
- The grater openings vary from 1 to 25 mm. Throughput rates of up to 20 m³/h.



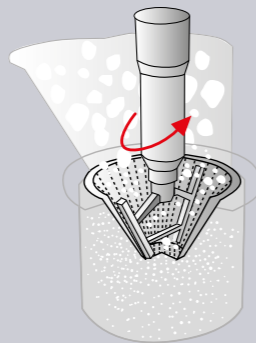
Safety and reliability in the process thanks to separating foreign components using sifters and lump-free starting products thanks to our Nibbler size reduction device.

Proper and efficient reduction of the raw materials improves the production results and ensures consistent quality.



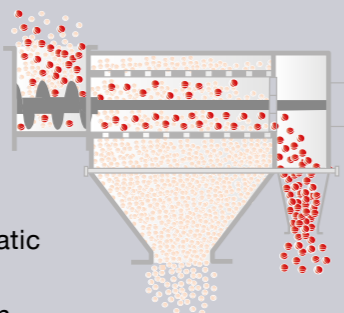
Cone Mill GCN

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



Centrifugal sifting station GS

- 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/hr can be achieved.



PHARMACEUTICAL PROCESSES

Gericke continuous feeding and blending units

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 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 modularized, 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 mixer
- Size reduction and filling equipment





GERICKE SERVICE

World-wide support for commissioning, Maintenance and servicing requirements.

Gericke's headquarters are in Zurich, Switzerland in Regensdorf. The newly-built Test Centre is also located here. In addition, there are 11 main agencies world-wide. To offer comprehensive service across the globe, Gericke has also built up a network of trained specialised agents. The Gericke Group has over 300 employees. We are an internationally-operating traditional Swiss company. We have many years of international experience with which

we have supported our customers world-wide to realise their bulk solid projects.

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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