



Conveying, feeding, mixing,
size reduction, sifting...

Systems and components for the bulk
materials processing industry

Gericke

Powder Processing Equipment and Systems

Over 115 years of expertise.

Gericke bulk materials processing technology can be found throughout the world in many sectors including the food, chemical, pharmaceutical, plastics and construction materials industries.

Experience

Gericke was founded by Walter H. Gericke, Milling Engineer, in Zurich (Switzerland) in 1894. The company has been designing and manufacturing equipment and systems for modern bulk material processes and providing design and consultation services ever since.

Customer proximity

The head office of the Gericke Group is in Switzerland. We do however have subsidiaries in many countries and maintain close contact with our customers with a network of well trained representatives, all specialists in their field. Our 280 committed members of staff have implemented projects in virtually all countries of the world and have a wide range of international experience.

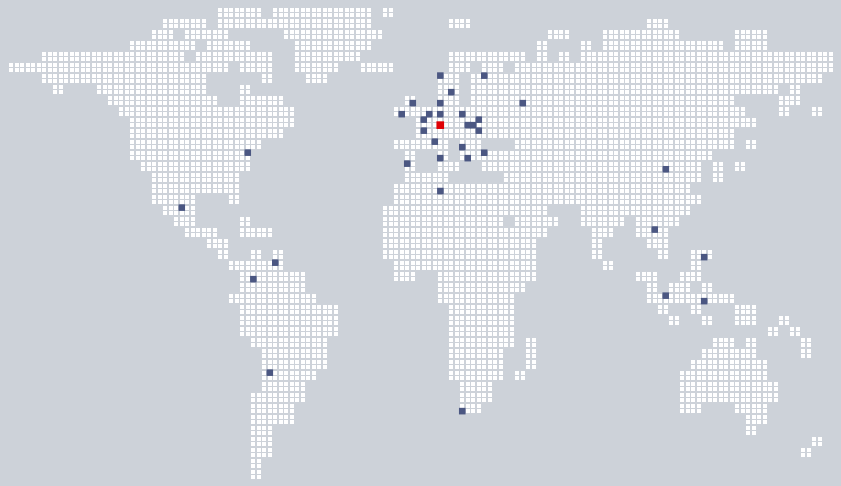
Only the very best bulk materials technology

“Made by Gericke” means effective return on investment, low maintenance costs and high availability of plants.

Our process stages include:

- Unloading of tanker vehicle and emptying of big bags and sacks
- Sifting and size reduction of agglomerates
- Pneumatic conveying
- Storing and discharging
- Conveying and feeding
- Mixing processes
- Filling
- Automation





Wherever you are, Gericke is there to assist you!

The properties of the bulk material in question are the most important factor! The modular construction and adaptability of our range of products offer the process designer a considerable number of options. Examples include:

Food industry

- Baking mixes
- Spices
- Milk powder products
- Muesli
- Beverages

Chemistry

- Aromas
- Base elements
- Paints, lacquers
- Fine chemicals
- Detergents
- Insecticides and plant protecting agents

Pharmaceutical industry

- Pharmaceutical products
- Cosmetics
- Vitamins

Building material industry

- Plasters
- Adhesives
- Plasterboards

Automotive

- Particle filters
- Catalytic converters
- Linings for brakes and clutches

Pet food industry

- Concentrated feeding stuffs
- Vitamin additives
- Fish food

Public utilities

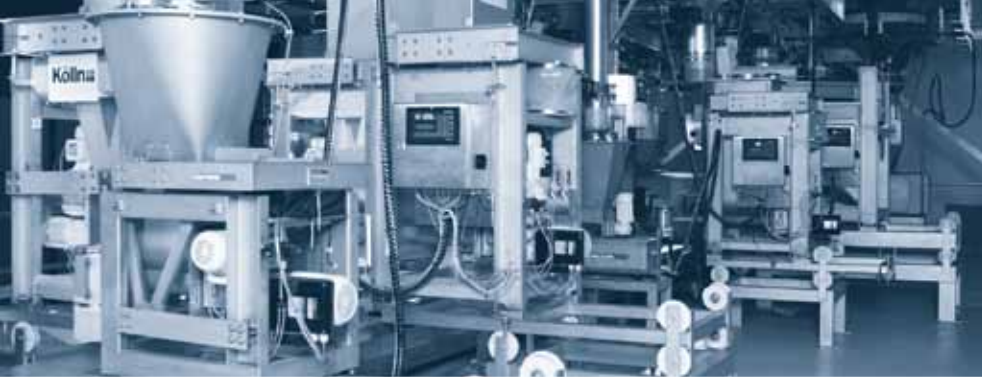
- Filter dust conveying
- Conveying of sewage granules
- Water processing

Plastics industry

- Master batch
- Extruder feeding
- Storage and feed systems

Gericke

Powder Processing Equipment and Systems



Systems ...

Customised systems

Gericke's operative principle is the planning, manufacturing, installing and commissioning of whole systems, specially designed to meet the requirements of the customer and the bulk material being processed. Product trials in our Test Centre are carried out to support selecting of components and process design. Consistent project management and scheduling procedures combined with comprehensive documentation are essential components for Gericke in connection with the successful handling of projects.

Controllers

Machine and system controllers provide improved process control and form the basis for the automation of production systems, the planning of logistics, quality control and traceability of manufacturing processes.

The STP and Easydos controllers are designed for pneumatic conveying systems and feeders. They can operate independently of master controllers and, if required, be integrated in a PLC system controller via one of the numerous interfaces.

Gericke plans and realises complex system controllers in collaboration with partner companies which can then provide a high level of on-going support locally.



Preparation of raw material and intermediate products

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

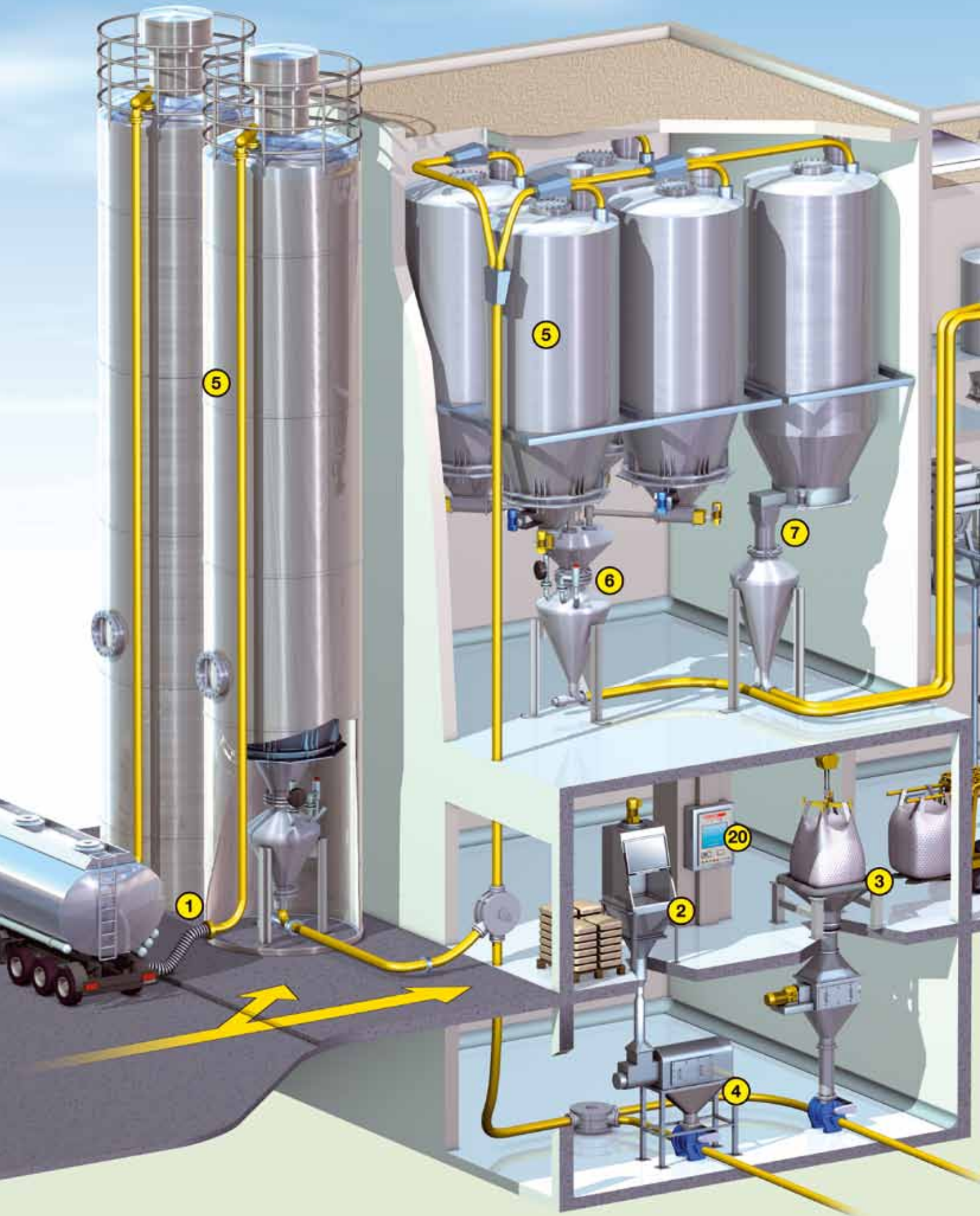
Loading of stirrer vessels (reactors)

- 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







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.



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 (Gericke 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 shot valve (explosion protection)

Safety



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



ISO 9001:2000 guarantees consistent quality



Gericke is member of EHEDG



Customer support during the planning, implementation and commissioning of a system is of great importance to Gericke. It is essential to achieve highest possible efficiency during production and to increase the cost-effectiveness of an investment to the utmost. Our processes undergo regular checking in accordance with the ISO 9001:2000 standard.



Key components are developed and manufactured by Gericke.





Receiving and discharging (of raw materials)...

Big bag emptying and filling station

There are various options for the reliable filling, emptying and handling of big bags. Filling and discharge stations with integrated weigh feeders and conveying equipment transport the bags (once they have been filled) to the next stage of the process.



Sack tipping and feeding station

Ergonomically designed bag feeding with integrated sifting equipment, magnets and nibblers for deagglomeration of material. The integrated or centrally positioned filters ensure a clean and safe working environment.



Dust-free infeed of products in processing lines is mandatory for hygiene, reduced contamination and explosion protection reasons. Gericke supplies ergonomically designed bag chutes and big bag discharge stations which include transportation of the sacks to and from the unit.

Unloading from tanker vehicles

Mobile discharge systems for gentle and energy-efficient unloading of road tankers.



Discharger

Turbex vibrating bin activators, RA or KAD discharge agitators reliably remove product from silos and tanks, including bulk solids with poor-flowing properties.





Conveying ...



Pressure vessel

Gentle conveying prevents abrasion, increase of bulk density and disintegration of particles. Slow conveying speeds between 3-15 m/s of plugs of material and strands. Pulse-line system with automatic control of conveying air of up to 80 m³/h and conveying distances of up to 400 m.

Distinctive features of pneumatic conveying systems:

- Concentration (μ): indicator showing loading efficiency in the pipework
- Speed: stress on material being conveyed cubes in relation to conveying speed
- Suction or pressure: different types of process design in connection with pneumatic conveying
- Feeding of product into the pipework: controlled infeed of bulk solids into the piping by means of vessel or valve

Lean phase



Medium phase



Dune conveying



Plug conveying



Packaged vacuum conveying systems

Compact modular conveying system for dust-free conveying from drums, big bags and sacks to loss-in-weight feeders and process equipment. Integral weighing can also be incorporated.

Rotary valve

Conveying systems with rotary valves can be turned into pressure or suction systems. They are shock pressure resistant and ensure flame containment.



Diverter valves

Plug diverter, rotating tube and flap diverter valves.

Diameters up to 300 mm.

Elbow

Significantly reduced abrasion of the conveying pipeline and prevention of angel hair formation with the patented diverting chamber, which reduces turbulence and friction.



Feeding ...

Volumetric feeders

The bulk material is metered volumetrically with a feeding helix or screw. Intromitters prevent the formation of bridges and ensure homogeneous conveying of the bulk solids into the feeding tool.



Loss-in-weight feeders

For continuous gravimetrically controlled loading of extruders, kneaders or continuous mixers. As a batch feeder for the weighing of products. The Easydos controller can be used as a flexible solution for all feeders and metering applications.



All powders, granules and fibres behave differently. Feeders supplied by Gericke can be customised to ideally suit the product in question.
See:
- Feeding of currants, cherries and dried fruits
- Feeding in tumblers for coating applications
- Feeding in kilns with long helices
- Feeding SAP (Super Absorber Polymers)
- Feeding of powdered egg yolk
- Feeding of liquids (with pump or helix)

Gericke feeders are available for outputs ranging from 0.2 - 50.000 l/h.

Weigh belt feeders

Weigh belt feeder for continuous weighing (weigh belt feeder) or registration (registering weigh belt feeder) of bulk solids. The bulk material conveyed on the belt is weighed within a defined section of the belt while the controller calculates and controls the feed rate.



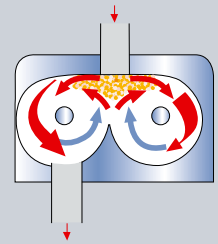


Mixing ...



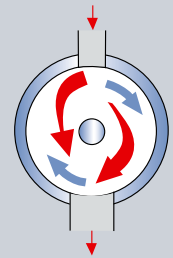
GMS Multiflux® batch mixer

Batchmixer. Horizontally designed double-shaft mixer with optimum product flow in the fluidised zone. Low energy input resulting in gentle blending of delicate products with maximum blending homogeneity. Batch sizes from 80 - 4000 l.



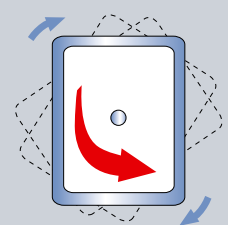
GBM single shaft mixer

Batch mixer with horizontally designed blending tool. Universal mixer for low to medium energy input for batch sizes from 40 - 4000 l.



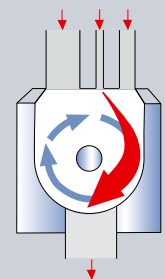
GDM drum mixer (Mixomat)

Batch mixer. Drum mixer for simple mixing tasks for use in a laboratory and production process. Drum sizes from 30 - 400 l.



GCM continuous mixer

Mixer for continuous processes. The mixer is suitable for mixing 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 demanding mixing tasks.



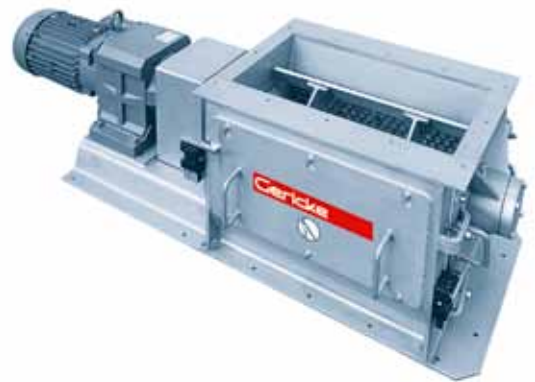
Our mixers produce high-quality intermediate or final products with maximum homogeneity. As a specialist in the field Gericke has expertise in related processes such as agglomeration, granulation, coating and heating transfer, which are essential for innovative products. The process can be run continuously and in batches.



Size reduction and sifting ...

NBS nibbler

Nibblers effectively break up lumps and agglomerates with rotating paddles and screen assemblies. Screen sizes vary from 1 - 25 mm. Throughputs are up to 20 m³/h.



Safety and reliability during the process by removal of foreign matter with sifters and deagglomeration of lumps in the final product by means of our Nibbler size reduction device.

Correct and efficient preparation of raw materials improves production results and ensures consistent quality.

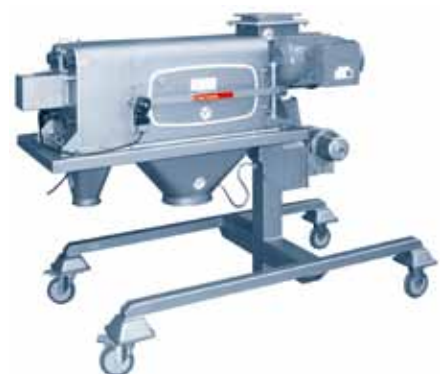
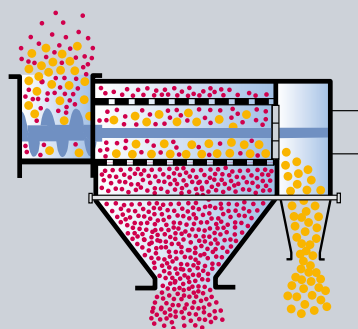
GCN cone mill

Gericke cone mills are equipped with a vertically rotating paddle blade assembly. The holes in the conical screen vary from 150 - 2000 µm.



CSM centrifugal sifter

For sifting, screening and removal of foreign material. CSM sifters are either positioned directly downstream from where the raw materials are received in the system or directly before the filling systems. Inline sifters can be integrated into pneumatic conveying systems. Mesh sizes between 50 and 4000 µm. Depending on the type of machine, outputs of up to 100 m³/h are possible.





The Gericke Test Centre ...



Customer service taken literally. We have got Test Centres in Switzerland, France, England and Singapore where large scale testing can be carried out in order to achieve optimum customising when planning a system. These centers are equipped with full-scale machines with experienced specialists on site who not only design tests to meet the customers requirements but also carry them out. Test reports are written for each test series and provide the customer with information which enables him to:

- Check the performance range of plant components
- Develop and test product innovations
- Confirm quality characteristics
- Determine product modifications
- Design processes
- Compare several machines

This allows comparisons between continuous and batch mixing processes or measuring of the increase in bulk density during a conveying process over a distance of 250 m.

A test run with a nibbler or cone mill is often the first step to improving a process.

Before carrying out tests, the exact objectives of the test run are agreed upon with the customer and measures to be taken are specified.

Safety measures for ATEX zones can also be specified during tests. The results of tests carried out in the Test Centre are used in the development of innovative or improved end products and significantly speed up the evaluation process in connection with the planning of systems. They provide increased security of investments.





Gericke Customer Service...

Gericke guarantees smooth running of production processes

We provide our customers with a comprehensive range of services.

In addition to the Test Centres, these include the following:

Hire units

Hire machines can be integrated into existing production processes and effectiveness can be monitored.

Assembly and its monitoring

Fast and correct installation of individual machines to form an effective system requires expert knowledge and careful execution. Our assembly team supervises and coordinates the complex monitoring functions and installation work for you.

Commissioning

Our specialists carry out the commissioning of the plant in various stages. After mechanical and electrical tests have been carried out, the systems are run without product and the controller is tested. Then the start-up with product takes place. Optimisation of the system continues even after initiation of the production process.

Training

Operators are trained to operate the system correctly during or after commissioning. Training includes maintenance and upkeep of the system as well as accident prevention.

Service and maintenance

Provision of efficient advisory service and consulting, if problems occur, is a high priority at Gericke. The Gericke Group has more than 20 Service Engineers in action around the world.

Spare parts

Many machines have been operating for more than 30 years. Our target is to be able to procure all parts within a reasonable period of time in order to keep storing to a minimum.

Gericke products are renowned for long-life and robust technology that ensures operational reliability and efficient production processes.

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