

## COMPETENCE IN CONVEYING

Positive pressure or vacuum, gentle or fast, short or long distances:  
Gericke has the right fit for your needs.



# WHY CONVEYING SOLUTIONS FROM GERICKE?

- Complete range for positive pressure and vacuum conveying
- Broad experience in all key industries and many different materials
- Comprehensive own range of vessels, rotary valves and automation for smooth integration

## 1. Dense phase positive pressure conveying:

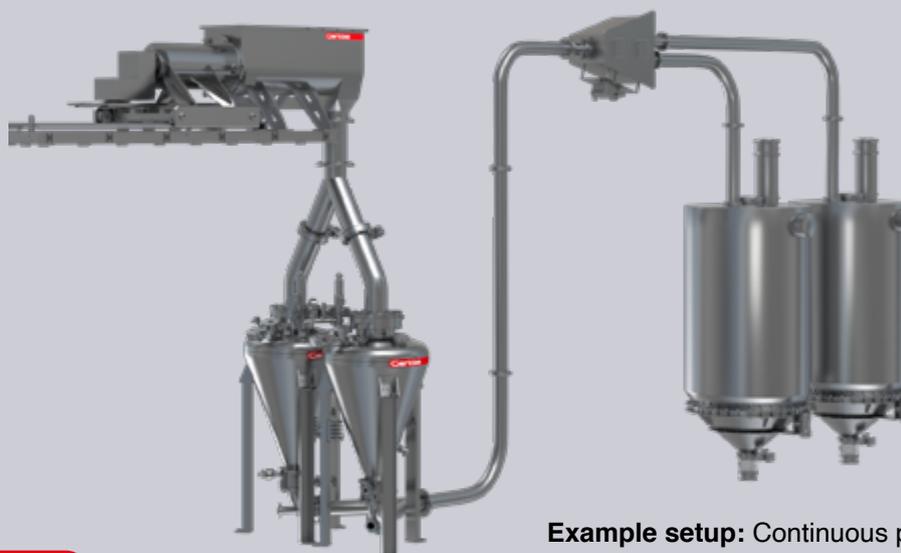
- Very gentle and efficient conveying with low gas velocities (4 – 12 m/s) with PulseFlow
- Safe conveying over long distances and high capacities with moderate gas velocities (15 – 25 m/s) with DenseFlow
- Safe and gentle conveying with external air injection system PulseLine
- Highest operation and energy efficiency with minimal gas consumption
- Conveying from one starting point to several receivers
- High pressure differences
- For distances up to 500 m

## 2. Dilute/lean phase positive pressure conveying:

- Universal conveying technology with high gas velocities (20 – 40 m/s)
- Low space requirements at starting point
- Conveying from one starting point to several receivers
- Low pressure differences
- For distances up to 100 m

## 3. Vacuum (negative pressure) conveying:

- Easy operation for short distances
- Low space requirements at starting point
- Conveying from several starting points to one receiver



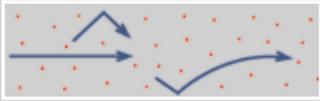
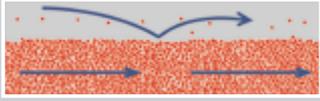
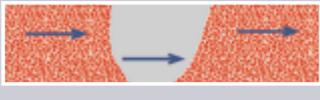
**Example setup:** Continuous pneumatic dense phase conveying system, using a double vessel after a continuous mixer

Expertise . Value . Trust

## Use our expertise!

With the experience from more than 10'000 installed pneumatic conveying systems, Gericke can offer the technology most suitable for your application.



	Product characteristics					Gas consumption	Pipe loading characteristics
	Gas speed (m/sec)	Conveying pressure (barg)	Abrasive	Fragile	Mixtures		
Dilute (in flight)	25 - 40	1				high	
DenseFlow (layer)	15 - 25	1-3	●	●	●	medium	
PulseFlow (plug)	4 - 12	1-3	●	●	●	low	
PulseLine (plug)	4 - 12	1-3	●	●	●	low	

# THE RIGHT SOLUTION FOR ALL CONVEYING NEEDS !

## **Fragile goods**

Dense phase conveying is in many cases a perfect solution for the transport of fragile goods. Trials in our test centres help establish the best configuration, even for the most sensitive products.



## **Long distances**

Positive pressure conveying can create a higher pressure difference than vacuum conveying and allows for many materials conveying distances exceeding 200 m and more.



## **High capacities**

Many applications especially in heavy industries ask for high transport capacities. Even systems beyond 100t/h have been realised and prove their reliability every day under the most demanding conditions.



## **Truck unloading**

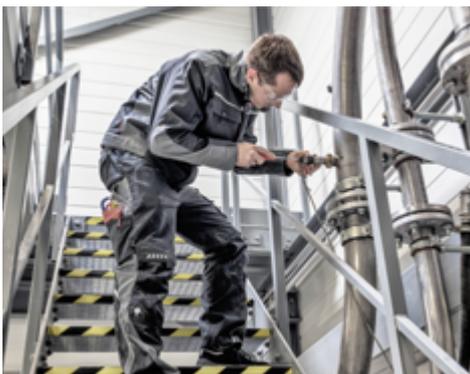
Pneumatic conveying can be used for dust-free and safe unloading of trucks with direct transport to a storage silo.





### **Reactor filling**

Direct conveying into a reactor is a safe and emission-free way to bring the product directly to the process. Conveying is even possible against overpressure, above or below liquid level.



### **Global Service and Support – We speak your language**

With our global network of subsidiaries, test centres and partners, we support our customers in all parts of the world. Wherever you are, we will be with you.



### **Bespoke solutions**

To satisfy even the most complex powder handling requirements, Gericke can custom create complete lines including product reception, storage, recipe preparation, mixing and conditioning.



### **Industry 4.0 is here – Assess, Prevent, Predict**

Gericke has extensive experience, not only in powder processing, but also in automation and sensor integration. Our systems can allow for on-line access to sensors, analytics and direct diagnostics, to assess the process and the machines, or for maintenance planning.

# DENSE PHASE CONVEYING

- For gentle product handling with no segregation, dense phase conveying is the perfect solution to preserve your materials.



**Dense phase pneumatic conveying systems are used when the product quality is of the highest importance. They minimise changes in bulk density and particle size distribution and also limit segregation effects.**

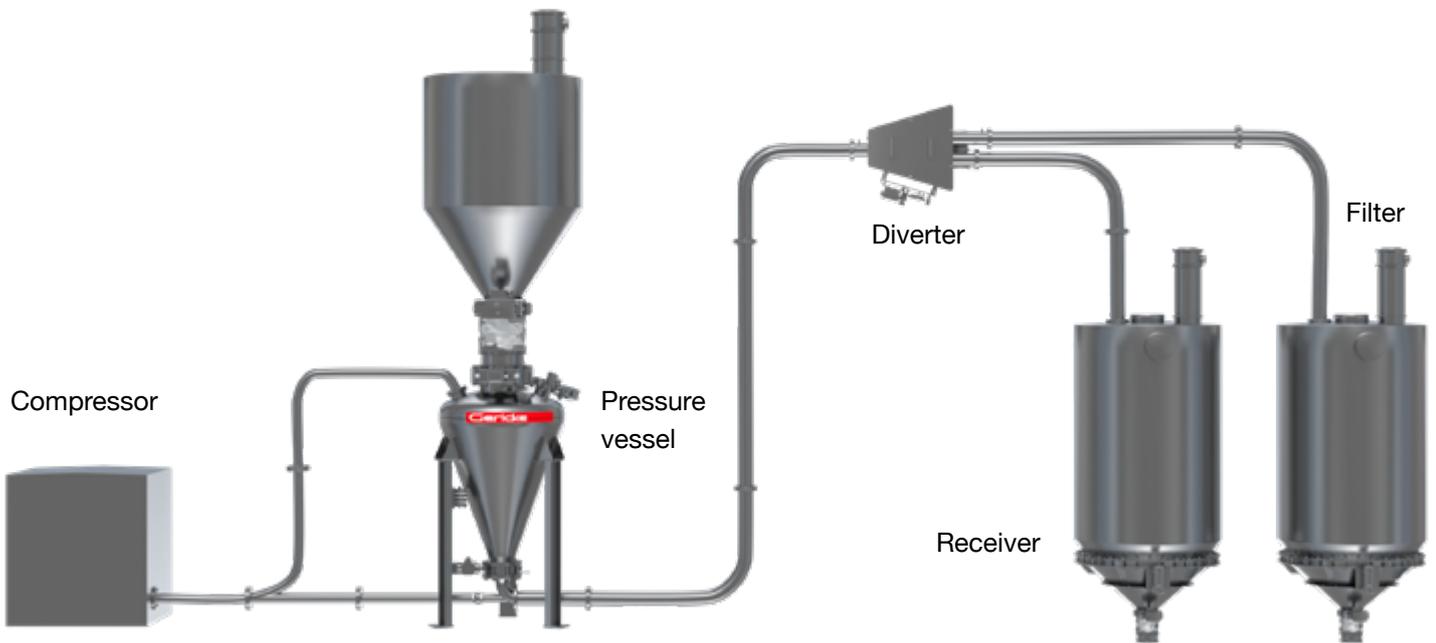
**The absence of rotating parts in pressure vessels reduces maintenance costs. The advantageous ratio of product to conveying gas also makes our systems energy efficient.**

Pressure vessels are utilised within dense phase conveying systems to introduce the bulk solids into the pipeline. Contrary to using rotary valves, the system has no leakage and is absolutely gas tight. This allows a high pressure range from 1 barg up to 6 barg, or more. The high loading and low velocity lead to gentle conveying and to low wear of both pipeline and receiver.

With dense phase conveying systems, the transport of bulk solids is possible from short distances right up to long distances of several hundred meters.

## Why dense phase solutions from Gericke?

- Broad experience in gentle conveying of fragile products
- Air and energy saving designs with sophisticated air control
- Secure, proven and reliable



## Your benefits

- Very gentle handling of fragile products
- Minimised wear of pipeline and bends
- Minimised segregation of mixed products
- Absence of rotating parts eliminate the danger of metal contamination and reduce maintenance costs
- Gas and dust tight system with no leakage air
- Batch weighing of pressure vessel possible
- High solids loading leads to smaller pipe diameter
- Low gas consumption reduces the required filter area on receiver leading to low operation and energy costs
- Different executions available suited for all types of industries
- Ready to use graphical pneumatic conveying controller STP 61



# DILUTE PHASE CONVEYING

- Easy to implement and versatile, lean or dilute phase conveying can be the perfect solution for many nonsensitive powders and bulk materials.

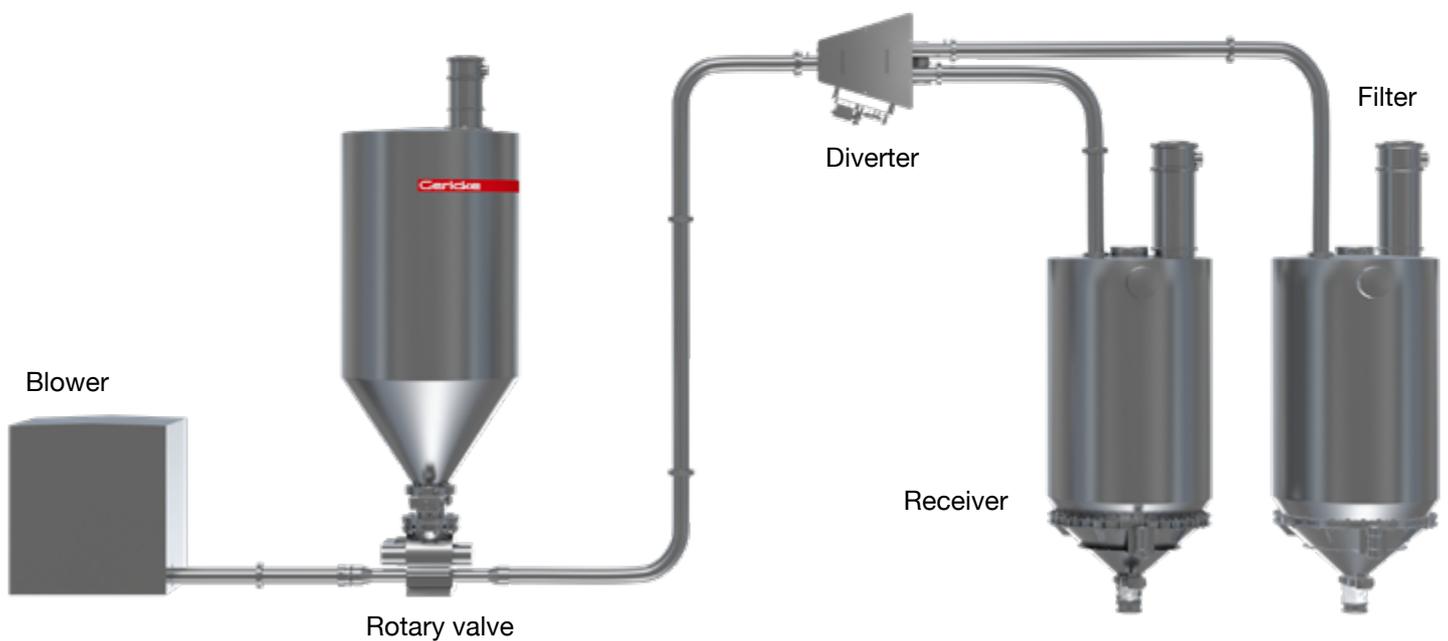


**Lean or dilute phase conveying systems are the ideal solution for transferring bulk materials that do not require particle preservation and are not abrasive. Its advantage lies in the versatility of products that can be conveyed as well as in the space saving setup.**

The product is usually introduced by means of a rotary valve into the piping system. A sufficiently high gas velocity (typically  $>20$  m/s) is required to keep the particles in suspension (keep the particles „flying“) and to convey the bulk solids into the receiving hopper. Gericke's rotary valves and the configuration of the product intake minimises the damage of the equipment by the unavoidable leakage air.

### Why dilute phase solutions from Gericke?

- Broad experience from many applications
- Complete own range of rotary valves
- Easy to clean valves for hygienic applications or product changeover

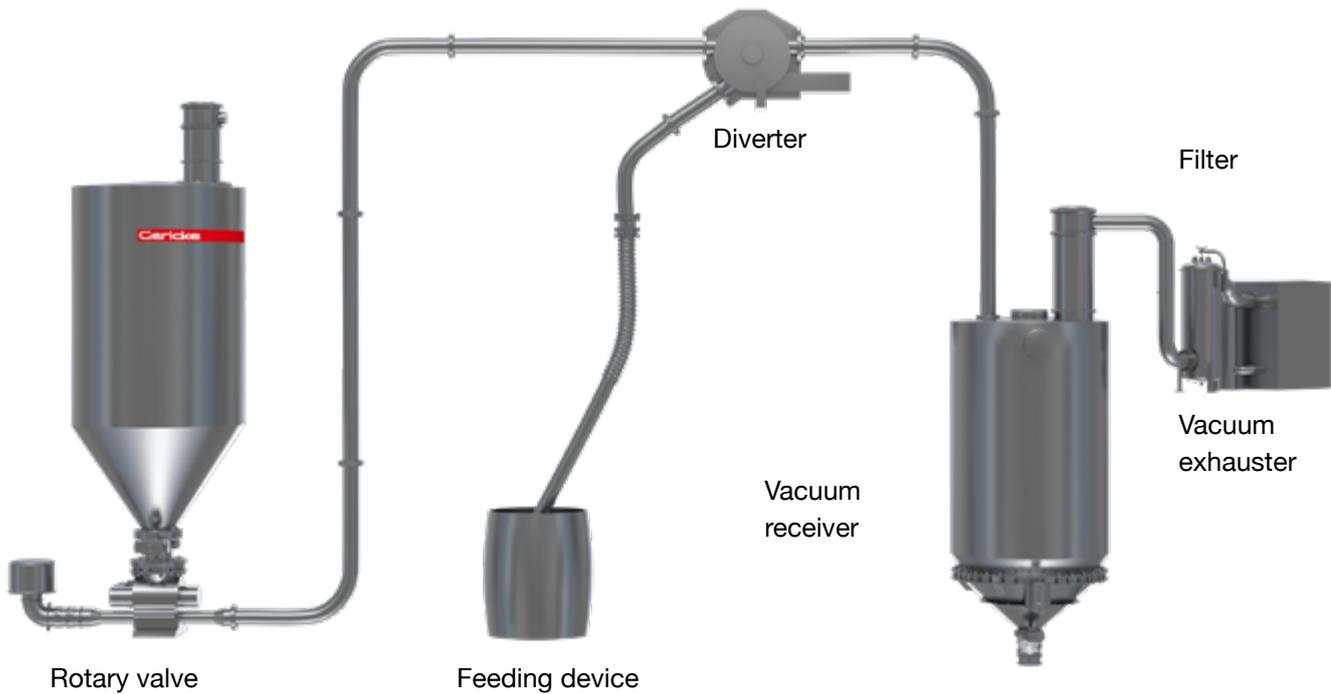


### Your benefits

- Gericke lean phase conveying systems are economical and reliable solutions
- Simple setup of the system
- Little headroom necessary for installation
- The throughput can be varied by controlling the rotational speed of the rotary valve
- Lean phase conveying systems can be used with in-line sifters for screening applications
- Gericke RotaVal rotary valves are available as easy to clean extractable units, with re-enforced replaceable blade inserts or in special executions for pharma and nutrition

# VACUUM CONVEYING

- The compact and cost friendly approach to many conveying needs.



Gericke's range of pre-engineered packaged vacuum conveying solutions have been designed to assist in loading and refilling processes, driven by venturi ejector. Alternatively, a dense phase conveying mode can be approached by using an electric vacuum pump.

The modular design provides the opportunity to adapt the suction device to various different handling or process equipment. Sack tipping, drum unloading, BBU Big Bag Unloading, feeder refilling, reactor loading, to name some examples. Vacuum conveyors are compact and light and are suitable for manual or automated operation.

## Your benefits

- Dust free conveying. Potential leaks are contained within the system.
- When operated with a vacuum ejector, simply connect the system to the existing compressed air net and run the system.
- Suitable for use in explosive atmospheres
- Hygienic and enclosed design and construction details available
- Additional equipment can be positioned directly into the conveying line (inline sifter, nibblers, cone mills etc...).
- Compact and light weight receiving vessels
- Modular construction for ease of strip down shortens cleaning time and maintenance interruption
- Control units can be pneumatically operated without ignition sources.



# ACCESSORIES



## STP 61 Conveying Controller

Manage your pressure dense phase conveying process in a convenient and reliable way using the STP 61 controller. Can be run independently as a single unit, or integrated into a PLC environment via various types of buses or communication protocols.

You gain flexibility and save costs and time because the programming is already complete and approved. You can also operate the conveying system independently from the status of the PLC. This is an advantage during commissioning and maintenance of your plant.

- Selection of various conveying modes
- Cost savings thanks to ready to use solution
- Quicker start up after commissioning, shifts or maintenance work
- Intuitive operation
- Connectivity via Ethernet IP, Modbus TCP, Profibus and Profinet
- Remote diagnostics
- Minimises air consumption, thus saving energy



## Increase the lifetime of bends for pneumatic conveying of abrasive materials with the Gericke Bend type GB.

Due to the special vortex chamber, the wear rate of bends for pneumatic conveying is drastically reduced. The lifetime cycle will be extended and your maintenance and downtime costs will be reduced.

- The elbow reduces wear and operating failure when conveying abrasives
- It avoids formation of angel hair for plastic pellets
- It is a space saving way to divert the conveying pipe direction by 90 degrees



## Pipe diverters

A full range of diverter valves complement the offering for pneumatic conveying systems, available with diameters up to 300 mm.

They have been developed to satisfy the needs of an ever more demanding market place, including the stringent requirements of the food and pharmaceutical industries, however they are also suitable for use in most other industries.

# TEST CENTRE



## Tests on an industrial scale reduce planning time and increase process safety!

Test centres in Switzerland, France, England, Brazil, USA and Singapore are available for customer tests under near-production conditions with original machines. It is also possible to test all types of pneumatic conveying setups, even with distances exceeding 200 meter! Experienced specialists design the test layout according to your wishes and perform the tests.

- Testing of machines and prototypes with original products
- Checking of performance ranges and accuracies
- Testing of the interaction of multiple machines
- Gaining of experience for product processing
- Sampling for laboratory tests and market response
- Customer training
- Remote test monitoring available

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