

Energy Saving and Efficient Pneumatic Conveying for the Salt Industry



Using innovative technologies and system designs
to improve process efficiencies

Overview

Schenck Process provides low energy, low maintenance, and environmentally enhanced material handling solutions for customers in process based manufacturing environments such as salt.

The company specialises in providing pneumatic conveying solutions that strive to reduce energy and maintenance costs, reduce the emission of dusts and harmful pollutants while helping customers to improve productivity.

Significant savings in power consumption, system downtime and lost production can be generated from the range of solutions provided by Schenck Process.

Experience and Excellence

With more than 35 years of experience in developing and implementing customised solutions for a wide range of process industries, Schenck Process has become an internationally recognised leader in pneumatic conveying technologies with many value adding systems installed across process industries.

Schenck Process' expertise in developing innovative solutions is complemented by its strong capabilities in design study, testing, project management and after sales services.

Pneumatic Conveying – Solutions for the Salt Industry

Pneumatic conveying is the most efficient and effective method of transporting granular and bulk solid materials to storage or to process within a production environment. Schenck Process specialises in designing, developing and implementing two forms of pneumatic conveying technologies – Lean Phase and Dense Phase pneumatic conveying.

The range of lean phase pneumatic conveying solutions use either vacuum or positive air pressure and are low cost, quick and simple to install and dismantle. This form of conveying has the capacity to move materials at high velocities (15-30 meters per second) and is used predominately within the food and pharmaceutical sectors.

Schenck Process dense phase pneumatic conveying technology is suitable for transporting difficult, abrasive and/or friable materials, and conveying material along a pipe in plug form at very low velocities (2-8 meters per second). This results in minimal wear on pipes and bends, promoting minimum maintenance and long life. Efficient use of compressed air also gives low power consumption and running costs.

The range of pneumatic conveying systems have been designed to provide a simple and effective method of transferring material from a

single collection point to either single or multiple reception points, and can be used throughout the industry. Schenck Process has an unrivalled range of pneumatic conveying technologies available to the salt industry, which are able to transport raw materials over a range of temperatures, tonnages and distances, all in a single pipeline.

Pneumatic conveying technologies provide the following benefits for the salt industry:

- ⊗ Lower Energy
- ⊗ Lower Maintenance Costs
- ⊗ Lower Operational Costs
- ⊗ Increased Productivity
- ⊗ Increased Reliability
- ⊗ Reduced Risk of Material Spillage
- ⊗ Reduced System Footprint
- ⊗ Flexibility to Extend Application

The Most Reliable Dome Valve®

Schenck Process pneumatic conveying solutions are supported and enhanced through the use of the original Dome Valve® which was developed by Clyde Materials Handling* in 1974, widely regarded as the best material handling valve in the world.

The original Dome Valve® has the ability to cut through static or moving columns of material through the use of its innovative inflatable seal mechanism, ensuring that a consistent pressure tight seal is created when the valve is in the closed position, but in the open position, it provides an unrestricted, full bore opening for the best product flow characteristics possible.

The original Dome Valve® is recognised as a low maintenance, long life solution that can last at least 1 million cycles between maintenance inspections.

The original Dome Valve® is used to control material flow, airflow and vessel pressures in dense phase pneumatic conveying solutions.

The original Dome Valve® core features include:

- ⊗ Full bore material flow
- ⊗ No moving wear parts
- ⊗ Only a quarter turn from full closed to fully open
- ⊗ Can cut through a column of static material
- ⊗ Handles with materials up to 480°C
- ⊗ Long intervals between maintenance visits
- ⊗ Sealing pressures up to 30 barg
- ⊗ Handles abrasive products with ease

**Clyde Materials Handling Ltd was purchased by Schenck Process in 2011 and the original Dome Valve® is part of Schenck Process technologies*

References

Schenck Process has several reference systems operating successfully in the salt industry which include those listed below.

Enhancing Customer Operations

The range of pneumatic conveying solutions from Schenck Process has a strong environmental design ethos. The drive towards enhancing the range of technologies was to help producers respond to the increasing need to reduce energy, emissions, maintenance and operational costs while improving process reliability and production performance.



Location	Application	Distance	Throughput (tons/hour)
Puerto Rico	Salt Conveying	48 metres > 3 metres ^	6.5 tph
Indiana	Salt Conveying	10 metres > 3 metres ^	6.5 tph
Ohio	Salt Conveying	37 metres > 10 metres ^	3 tph
Maryland	Salt Conveying	85 metres > 18 metres ^	Dependent on Operator
Kentucky	Salt Conveying	55 metres > 15 metres ^	1.6 tph
Iowa	Salt Conveying	18 metres > 6 metres ^	5.5 tph
Pennsylvania	Salt Conveying	37 metres > 15 metres ^	14 tph
Idaho	Salt Conveying	24 metres > 45 metres ^	0.2 tph
Philadelphia	Salt Conveying	38 metres > 5 metres ^	0.4 tph
Philadelphia	Salt Conveying	23 metres > 5 metres ^	0.4 tph
Philadelphia	Salt Conveying	12 metres > 5 metres ^	0.4 tph

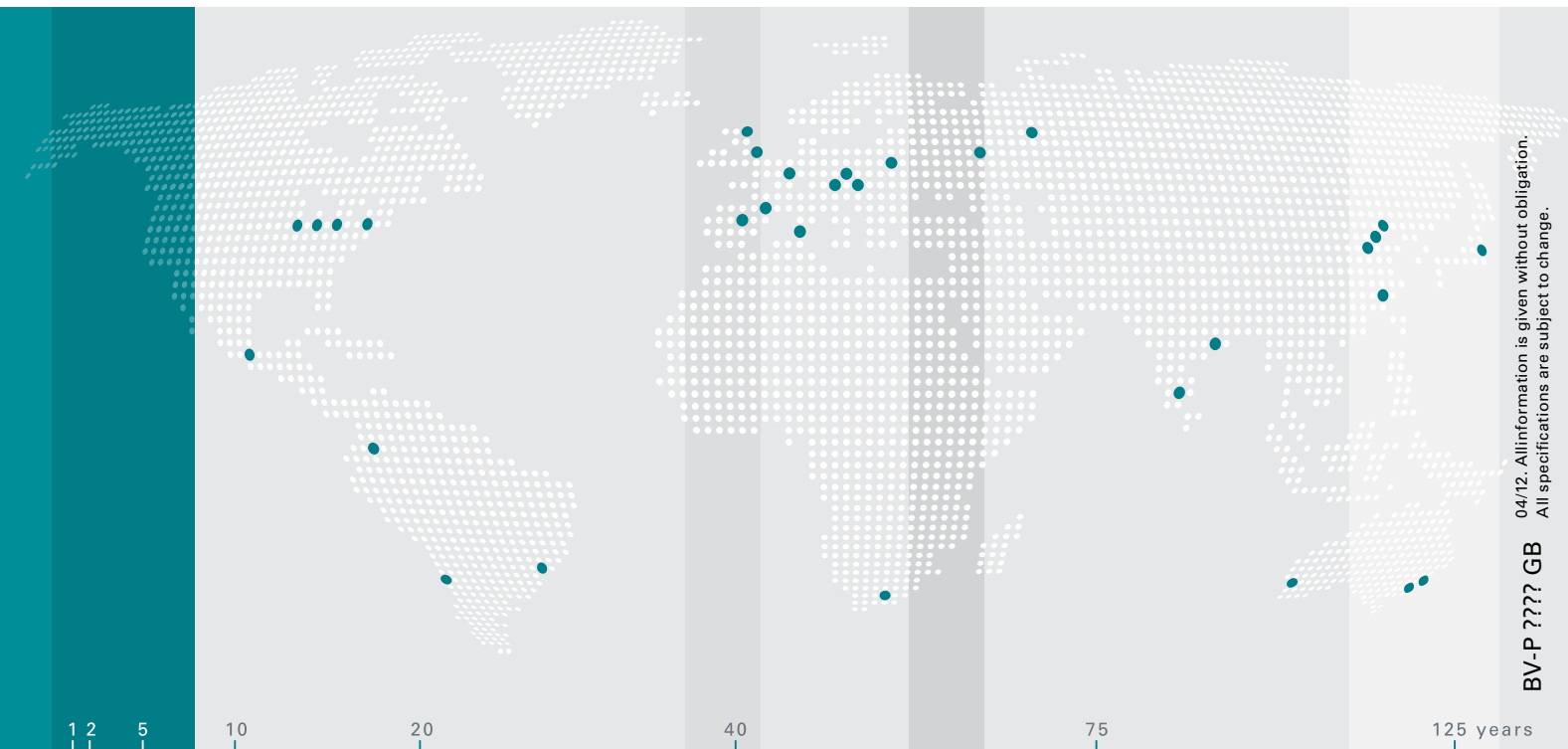
weighing

feeding

measuring

conveying

filtration



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All specifications are subject to change.

The Schenck process Group is the global market leader of solutions in measuring and process technologies in industrial weighing, feeding, measuring, conveying and automation.

The Schenck Process Group develops, manufactures and markets a full range of solutions, products and turnkey systems by combining process engineering expertise, reliable components and field-proven technology

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