



**SUCCESS STORY:**  
 AERZEN  
 BASF Rudolstadt

# AERZEN HYBRID SPECIFICALLY OPTIMISES PNEUMATIC CONVEYING SYSTEM.

**Pressure for all conveying requirements**

Compressed air for pneumatic transport of granules and powdery material must be customized for the corresponding application. This is proven by two different supply concepts at BASF Performance Polymers GmbH in Rudolstadt/Thuringia (Germany). The required transport air is generated on the one hand by oil-free compressing screw compressors made by AERZEN with highest pressure of 3.3 bar, on the other hand however by oil-free compressing positive displacement blowers made by Aerzener Maschinenfabrik GmbH with highest pressure of 0.95 bar. Since 2007 they are also using a packaged unit of the new AERZEN Delta Hybrid rotary lobe compressor series. The units of this new series do not only need up to 15 per cent less electrical energy than conventional positive displacement blowers. They are also convincing by their low maintenance costs and a reduction of Life-Cycle-Costs.

**Tailored concepts**

With about 95,000 employees and more than 150 production sites worldwide BASF is the world's leading chemical company. At the industrial park in Rudolstadt near Weimar BASF Performance Polymers GmbH produce since 2003 polyamide granules as base material for the production of compounds and for the production of composite films for foodstuff packings. Compressed air as transport medium performs central tasks for the entire manufacturing process. "For our various tasks we need different pressures. Therefore we are working in both sections with customized generating concepts", emphasizes plant foreman Stefan Ortschig.

*„Due to the considerably higher capacity of this Delta Hybrid-rotary lobe compressor of 36 m<sup>3</sup>/min since its commissioning we could supply for the first time all the three conveying lines at the same time with compressed air.“*

Jörgfried Heise,  
 production engineer



<b>Segment</b>	Environmental engineering
<b>Problem</b>	Two different supply concepts need different pressures for conveying air
<b>Solution</b>	AERZEN Delta Hybrid
<b>Result</b>	Saving of energy and reduction of the Life Cycle Costs
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### Concept 1:

#### Conveying air with highest pressure 3.3 bar

In production section 1 first of all granules are fed in a closed system from silos via rotary valves into a pipe and then conveyed pneumatically over a distance of 450 metres to production section 2. There the granules are separated from the conveying air in cyclone separators and prior to further processing stored again intermediately in silos. Afterwards, the conveying air purified in cyclone separators is returned via a second piping to production section 1, where it is fed again into the circuit as conveying air. For this task two oil-free compressing AERZEN screw compressors (type VM10, conveying volume 9.2 m<sup>3</sup>/min) generate the required conveying air with highest pressure 3.3 bar and supplement continuously the losses occurring in the system.

### Concept 2:

#### Conveying air with highest pressure 0.95 bar

In production section 2, an open pneumatic conveying system is working. Here granules are conveyed by air from silos via rotary valves and weighing equipment to packaging plants. For this pneumatic transport a pressure of only 0.95 bar (minimum pressure 0.5 bar) is required. Therefore it is not generated by screw compressors but by

positive displacement blowers made by AERZEN. Up to 2007 three units were available with the following capacities: A larger unit type GM35S with a constant conveying volume of 30 m<sup>3</sup>/min and two smaller units type GMa 11.2 with a constant conveying volume of each 6.2 m<sup>3</sup>/min.

#### Delta Hybrid-rotary lobe compressor - a worldwide novelty

This generating concept principally still exists - however with a significant difference: In 2007 an additional AERZEN packaged unit of the new Delta Hybrid series (Type D 62 S) was installed and commissioned immediately as mostly sole supplier of conveying air



### The company

Aerzener Maschinenfabrik GmbH, founded in 1864, is a worldwide leading manufacturer of twin-shaft positive displacement machines and turbo machines. The range of products includes rotary lobe compressors, positive displacement blowers, turbo blowers, screw compressors and gas meters. Aerzener Maschinenfabrik has about 1,800 employees and more than 40 international subsidiaries. The innovative technological solutions

from AERZEN include empirical values of a company history of more than 145 years. Industrial plants all over the world are provided with gaseous media using AERZEN blowers, compressors, turbos and gas meters. Besides standard products the company also develops customer specific special solutions. Moreover, AERZEN offers a wide range of After Sales services - from repair and modernisation of existing plants up to Condition Monitoring.



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