

AZO®MULTIAIR dense phase conveying for short on degradation and dehomogenization over long distances and with high conveying capacity

Gentle on the product

Low wear

Low level of dehomogenization

High conveying capacity

Long transport distances

Energy saving due to targeted transport air supply

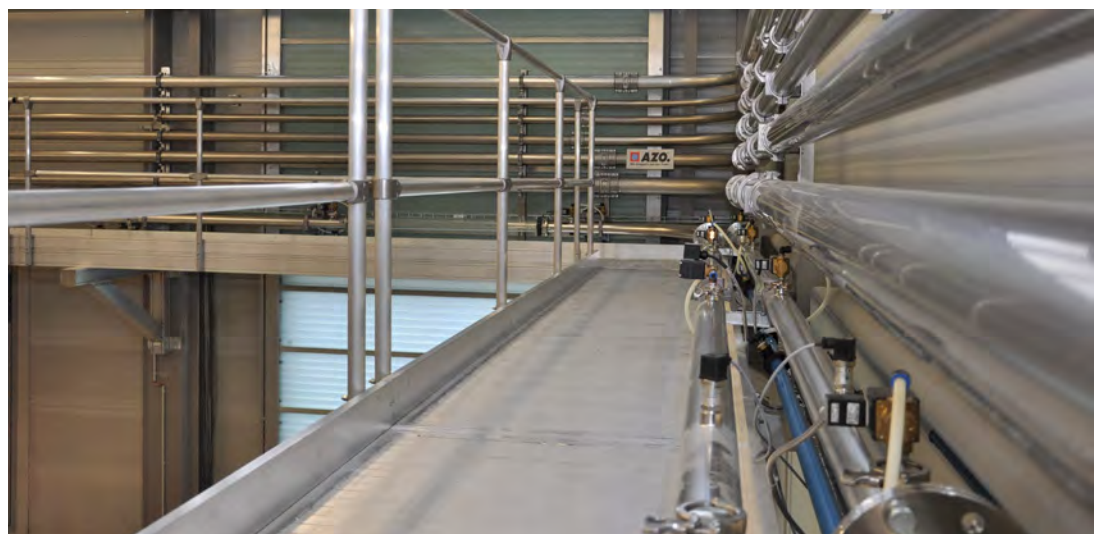
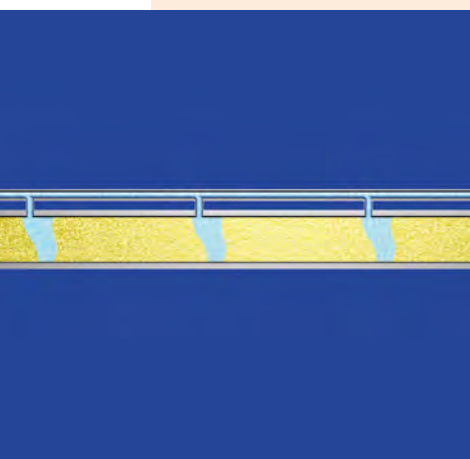
Preferred applications

AZO®MULTIAIR dense phase conveying is a system that operates in the positive pressure range. The transport pressure range is between 1 and 4 bar positive pressure. The optimum transport pressure setting is based on the product and performance. This transport system is particularly dedicated for abrasive products such as PVC Dryblend and fiberglass-reinforced granulates as well as for pneumatic transport of foodstuffs such as breakfast cereals, instant products or milk powder with low levels of dehomogenization.

Special advantages

The extremely low transport speed is gentle on the product and transports it with low levels of dehomogenization. In addition, the wear on the system is reduced at the same time. The wide transport pressure range means that this system is particularly suited to high transport rates at the same time as for covering long transport distances. The control system is optimized for the product in question, while the targeted input of secondary air allows this system to operate with great energy efficiency.

SYSTEMS



System description

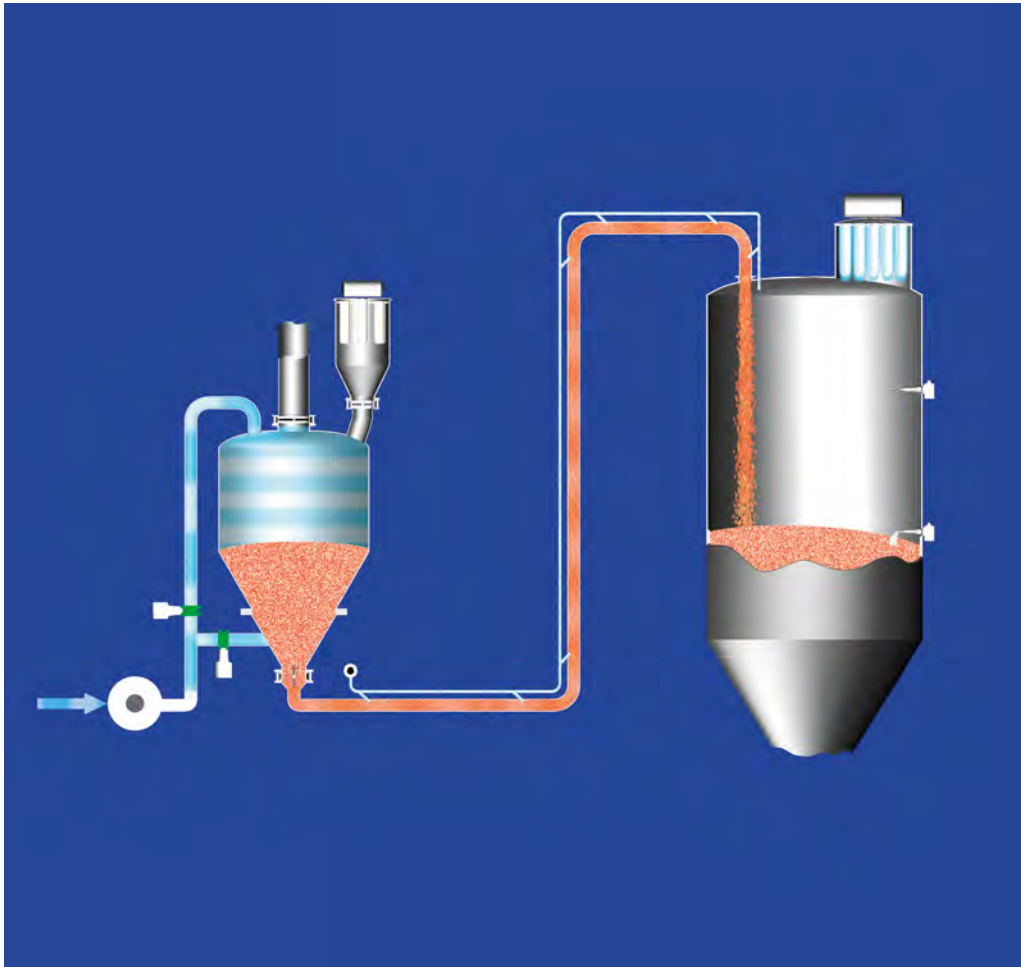
In this optimized pressure vessel transport, the fluidization condition in the bulk material is maintained by blowing in secondary air. This means the coefficients of friction between the tube and product are drastically reduced.

The air quantity is added through standardized proportional valves, and this addition is controlled by the central control system.

Optimizations for specific products are possible at any time. Plant safety is assured by special non-return valves positioned between the transport line and injector valves. These measures mean that transport can take place with a high belt loading rates and low speeds, without blocking the transport line.

System and product wear is very significantly reduced compared to dilute phase transport. Low compressed air consumption, low filter surface load and small tube cross sections means the TCO (total cost of ownership) is reduced.

AZO®MULTIAIR discontinuous transport



System description

A pressure vessel is located at the product loading point which is equipped with corresponding sealing elements and a loading shoe that supplies the product into the conveying line. There are input points for bypass air at specific locations in the conveying line. The system operates on a discontinuous basis and can be equipped with a convenient operating control unit using a touchscreen.



Supply of the product into the transport line

How it works

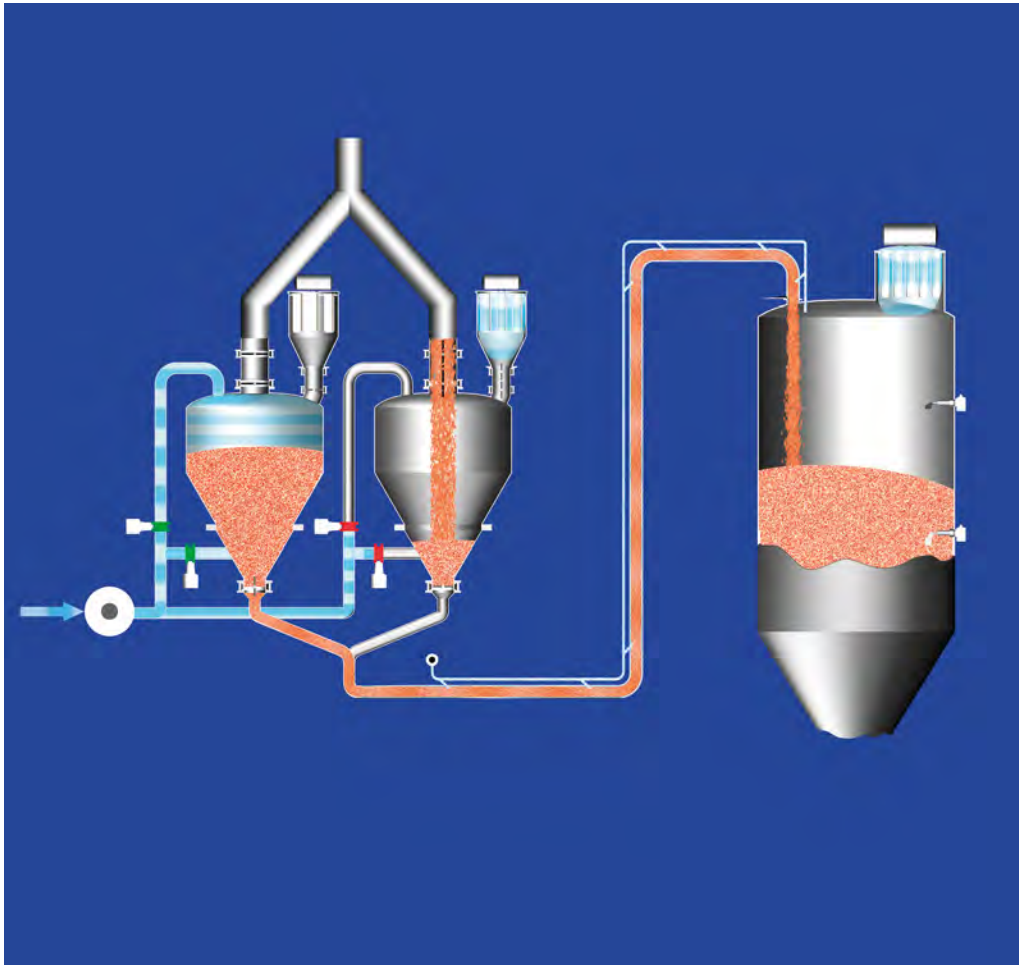
The material being transported is filled into the evacuated pressure vessel and then the pressure vessel is closed. When transport starts, the outfeed valve is opened and the transport material is forced out of the pressure vessel into the transport line via compressed air. If necessary, outfeed devices can be installed in the pressure vessel so that the transport material can flow out of the pressure vessel more effectively. There are input points for bypass air at specific locations in the transport line. Here, additional transport air is gated into the line in order to fluidize or split up clumps. These measures reduce the resistance that the product causes in the transport line. When the pressure vessel is empty, transport can be interrupted with a product filled

conveying line. For this purpose, the pressure vessel's outlet valve closes and the inflow of bypass air is interrupted. The positive pressure in the pressure vessel is now reduced via a ventilation flap in order to allow refilling of the pressure vessel again. The bypass air allows a restart of the conveying with the still filled conveying line. The bypass air quantity can be set differently according to the product. The parameters are stored in the control software for specific products, which means a very wide range of bulk materials can be conveyed with the same mechanical setup of the conveying system.



Pressure vessel for loading product into the transport system

AZO®MULTIAIR continuous transport



System description

The continuous MULTIAIR transport system operates with two pressure vessels that are filled alternately. These pressure vessels are equipped with the corresponding apparatus, valves and sealing valves. In addition, there is a loading shoe for gating the product into the transport line, while bypass valves are attached along the transport line. A touchscreen controller with visualization is used for controlling this system conveniently, making it possible to operate the system safely and efficiently.



Supply point for bypass air

How it works

In this variant of the MULTIAIR transport system, two pressure vessels are located next to each other, and they transport the product through the transport line alternately. The two pressure vessels are controlled in such a way that one pressure vessel transports the product whilst the second pressure vessel is being filled. When the second pressure vessel has been filled, it can be prepared for transport and take over this function as soon as the first pressure vessel is empty.

Once the second pressure vessel has taken over transport, the first one is vented via venting valves, refilled and prepared for transport. Once the second pressure vessel is empty, the first pressure vessel takes over transport again. The combination of pressure vessels means that transport does not have to be interrupted for filling of the vessels, thereby allowing continuous operation. In this system too, it is possible to perform a restart with a filled conveying line due to the bypass air.



Loading shoes and combination in one supply line

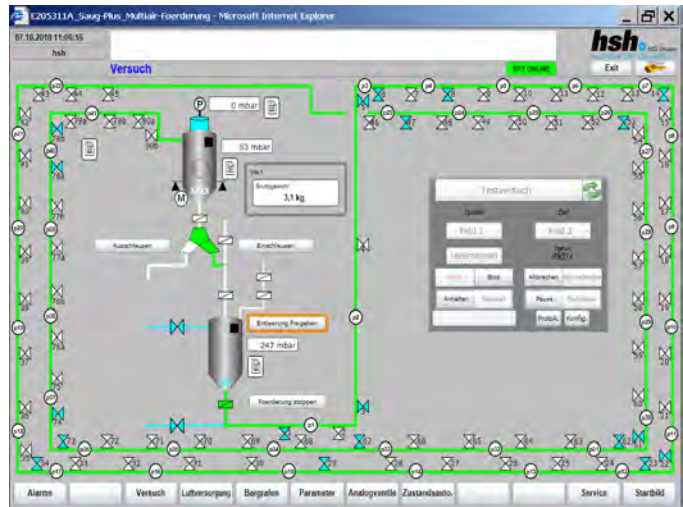


Continuous system with two pressure vessels

Intelligent, user-friendly control

The AZO®MULTIAIR is a stand-alone system equipped with a user-friendly control system with touchscreen for operating, controlling and monitoring. The control system is programmed according to the requirements of the line, whether discontinuous or continuous. A high level of safety is achieved by monitoring the pressure limit values. The process visualization system permits the parameters to be set optimally for the bulk material in question, particularly in the commissioning phase. If different bulk materials should be transported with the same system, it is possible to allocated product-specific parameters to the corresponding conveying cycle.

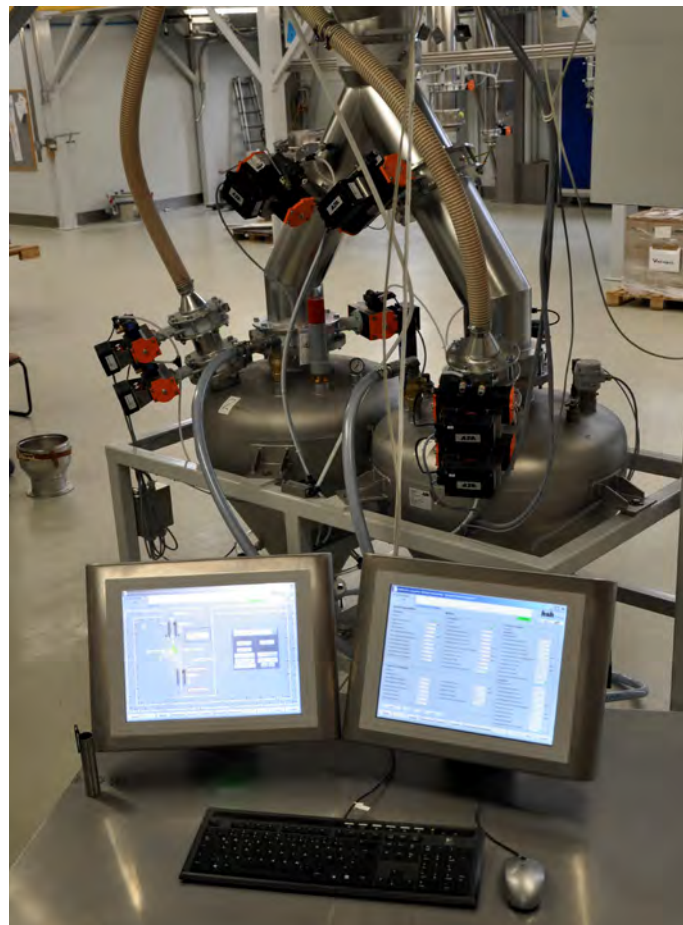
The process visualization system of the touchscreen allows the operator to detect the current status of the system at any time and, if required, achieve very stable and energy-saving transport which is, at the same time, gentle on the product and has low levels of dehomogenization. This is done by activating the bypass valves for secondary air. The controller of the AZO®MULTIAIR transport can also be implemented in larger systems like central process control systems and visualization systems. The efficient linkage between pressurized transport with secondary air in conjunction with an intelligent control concept sets new standards in pneumatic transport systems.



Convenient control, clear efficiency (visualization of a test plant)



Receiver vessel for outputting the product into the follow-on process



Energy-efficient system because the transport is optimally adapted to the product and performance level



AZO GmbH + Co. KG
 D-74706 Osterburken
 Tel. +49 (0)6291 92-0
 azo-solids@azo.com
 www.azo.com

The design is subject to change due to our continuous improvement program.