



Dense Phase Pressure Pneumatic Conveying

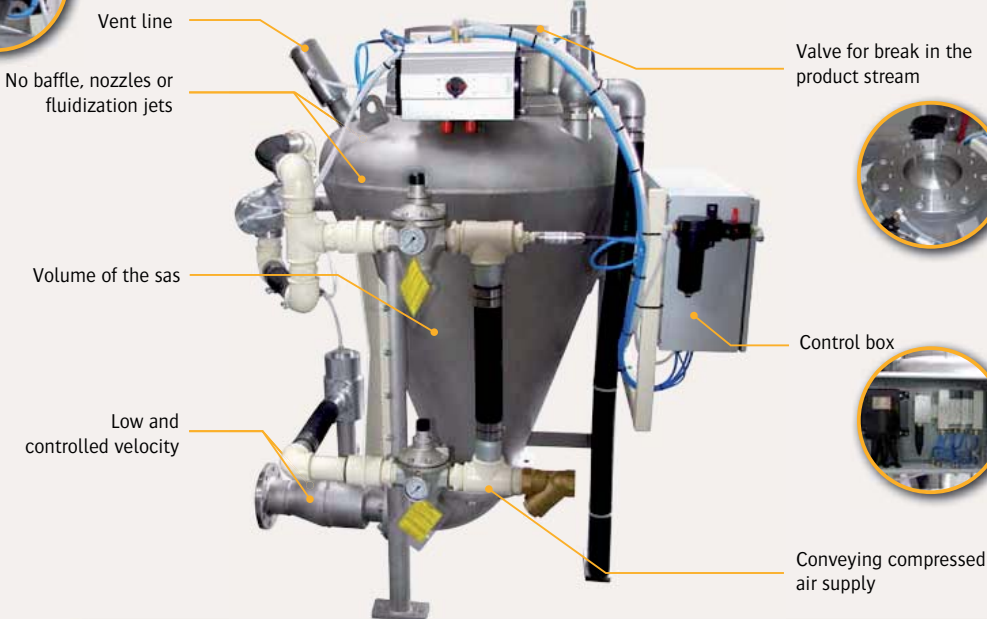


Convey rate: 2 to 100 tons/h.

VERY ABRASIVE MATERIALS CONVEYING

This dense phase pressure conveyor system is suitable for **very abrasive materials**, at all throughput rates and all temperatures.

In this type of pneumatic conveyor, the valve cuts the product flow above the transfer tank. This tank is fitted with a double case and a special output elbow that allows sending the product slowly to the pneumatic conveyor piping. This completely patented dense phase conveying system allows to ensure the elbows for up to two years against abrasion, and to provide a guarantee of 1 000 000 operating valve cycles before general revision. Furthermore, the dispatching valve can be cooled by water circulation, which allows to send materials at very high temperature in the process.

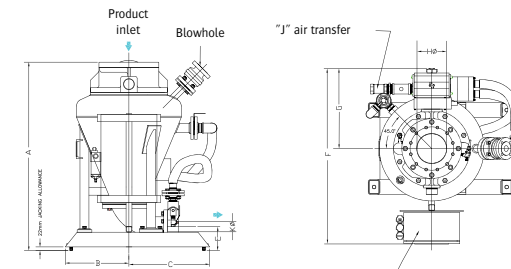
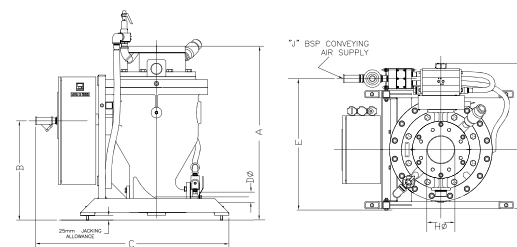


PNEUMATIC CONVEYING RANGE



MINIMAXFLO®
from 15 to 85 liters

MAXFLO®
from 114 to 3,500 liters



Electro-pneumatic control panel

Models	Dimensions in mm.									Weight in Kg
	A	B	C	D	E	F	G	H	J	
15/4-2	718	485	803	25/40/50	725	330	405	100	20	109
30/4-2	923	510	835	40/50	730	335	428	100	20	130
30/6-2	908	510	835	40/50	730	335	428	150	20	142
60/4-2	933	545	1.081	50	734	330	484	150	20	390
60/6-2	968	555	1.081	50	734	330	484	150	20	390
85/8-3	1.114	769	1.290	80	1.028	521	600	200	40	415

Models	Dimensions in mm.									Weight in Kg
	A	B	C	E	F	G	H	J	K	
114/4-4	1.269	400	337	162	1.190	543	200	50	102	335
114/8-4	1.279	400	337	162	1.190	543	200	50	102	455
228/8-5	1.503	400	337	241	1.252	535	200	50	127	525
342/8-6	1.725	400	327	252	1.285	533	200	63	152	555
342/12-6	1.807	400	327	235	1.131	521	300	63	152	753
570/12-8	2.026	400	400	219	1.127	435	300	76	203	1.157
857/12-10	2.276	480	502	305	1.153	375	300	76	254	1.501
1428/12-12	2.956	480	502	337	1.607	781	300	76	305	2.019
2125/16-12	3.680	480	495	305	1.607	781	400	101	254	2.450
2825/16-12	4.230	480	502	337	1.848	898	400	127	305	3.130
3500/16-12	4.759	480	502	337	2.247	1.092	400	153	305	3.850

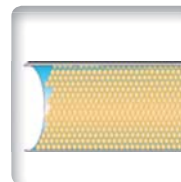
Advantages



▶ Limited abrasion and segregation



▶ Long conveying distances



▶ Very high convey rates



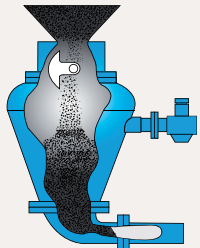
▶ Optimized design to meet specific needs

▶ PNEUMATIC CONVEYING RANGE - DENSE PHASE PRESSURE

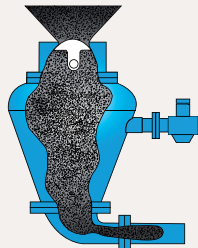


▶ OPERATING MODE

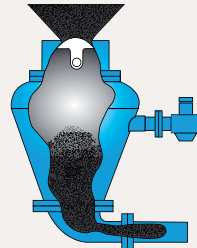
1. Airlock filling by the dome opening and the vent line (pinch valve)
2. End of filling controlled by temporization. Valve closure in the material column. The airlock is 100% filled
3. The airlock is sealed by the vent line closure and the pressurization of the dome seat
4. Pressure rising of the airlock and starting time for the material evacuation
5. Degassing of the airlock by vent line and cycle reset



Introduction of the material in the sas



Closure of the valve in the product = reduced air consumption
The airlock is filled at 100%



Controlled introduction of air

▶ TECHNICAL SPECIFICATIONS

Particle size: from very fine (ash) to big (peanuts)
Overpressure average level: 4 bars
Manufacturing: cast iron, 304L and 316L stainless steel
Compressed air consumption: 2 to 114 Nm³/min.
Maximum conveying distance: 700 m.
ATEX Certification: zone II 1,2,3 GD (EMI less to 3 mJ)
Maximum temperature: 280°C
Maximum operating temperature: > 300°C
Inlet Ø: 50 to 600 mm.

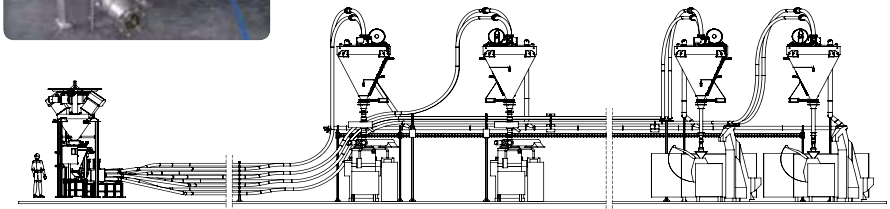
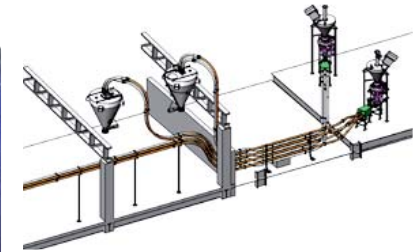
▶ ADVANTAGES

- . For granules, powders and mixtures
- . Slow and smooth conveying, with less compressed air and energy consumption
- . A simple system and not contaminating
- . Less wear due to low conveying rate
- . Without mixtures damages
- . Stainless steel construction for sanitation or corrosion resistance

▶ CASE STUDY

Realization of an assembly of pneumatic conveying to feed sack filling machines:

- 2 feeding silos
- 4 packaging lines



▶ EXAMPLES OF INSTALLATIONS



Loading tank cars



Long convey distances



Dedicated high-rate line

Pneumatic Conveying

Why our pneumatic systems are the most air efficient in the market ?



The Inflatek® valve is unique in its ability to close and to ensure sealing in a single action, through a column of static or mobile material. This feature ensures complete filling of the tank. Air consumption is strongly minimized.

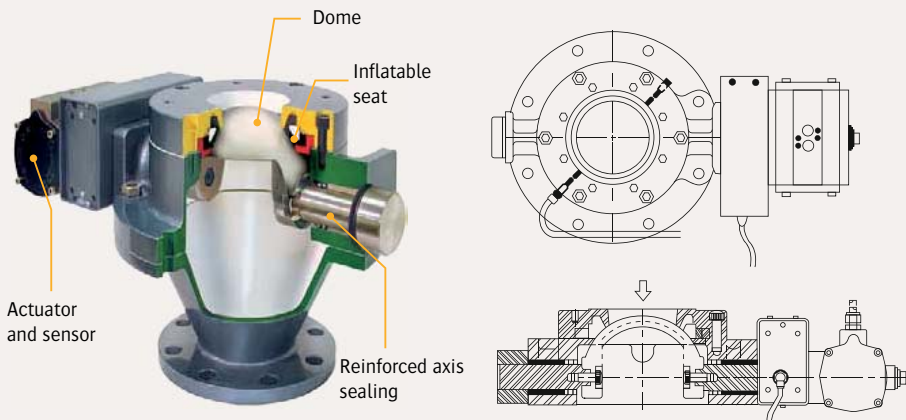
Sealing is provided by the inflation of elastomeric sealing gasket which prevents wear from erosion of the seat and of the seal of the valve.

The Inflatek® valve has a nominal capacity of one million cycles between each inspection, which almost eliminates the maintenance operation and costly production downtime.

ADVANTAGES

The Inflatek® valve was specially developed for pneumatic transfer tanks.

- No abrasion
- Tight and sealed closing thanks to an inflatable seal
- Tight and sealed closing thanks to a static or moving product column
- Pressure: 43 bar
- Temperature: 280°C
- Size: 50 - 600 mm



TECHNICAL FEATURES

▶ **Abrasive materials:** abrasive slurries, powders, bulk granules and gases loaded with dust cause erosion of the seat and the inefficient closure of classic valves. The inflatable seal and its function of automatic compensation overcomes the problems related to wear because of abrasive materials.

▶ **Differential pressure:** this pressure usually causes the rapid wear of the seat due to non-caught particles and transportation at high speed. The inflatable seal allows to effectively catch particles to prevent their movement and thus the premature wear of the machines.

▶ **Closing and sealing:** the movement of the dome enables complete closure in the bulk material column and the action of the inflatable seal allows a perfect sealing.

Additional information

The inflatable seal is available in different polymer versions according to the material ranges from abrasive dusts to food products.

If the material flows into the vacuum or remains static within a column, the valve is designed to stop the transfer and provide a complete sealing.

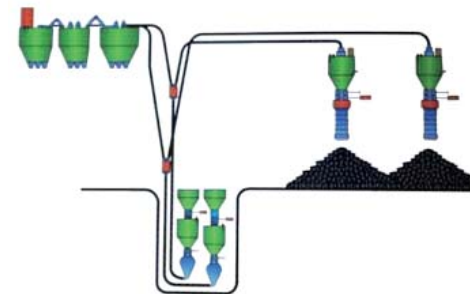
Examples of Installations

U.S. DEPARTMENT OF ENERGY

Objectives :

- Minimum particle size degradation
- Low operation cost

Retrofit of a poorly designed pneumatic conveying system for run-of-mine coal fuel size 50 mm. Low velocity, dense phase coal handling for rotary grate coal fired boilers and dust-free yard storage. The coal transfer system has been developed to maintain a low velocity of the coal fuel. In addition to minimizing material degradation, the low velocity ensures very little or no pipe wear.



Basic data:

- Coal fuel
- 2 X low velocity conveying systems (50 mm)
- 5 reception point
- Ambient temperature
- 40 t./h.

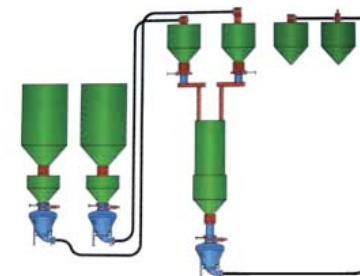
ALLEN SUGAR

Objectives:

- Minimum particle size degradation
- Low operating cost

Allen Sugar required the most modern handling system for fragile granular sugar and dextrose without any change to the product grain size or shape. Exacting degradation limits were established for pre-contact engineering.

The system satisfied all objectives with negligible degradation of the sugar granule or the dextrose material.



Basic data:

- Sugar, dextrose
- 3 low velocity conveying systems
- 2 to 5 reception points
- Ambient temperature
- 12-30 t./h.

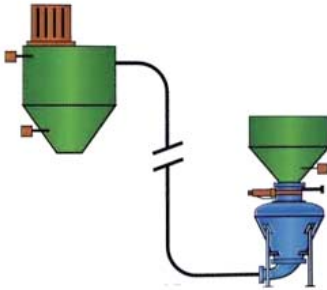
Examples of Installations

BRUNNER MOND

Objectives:

- Minimum particle size degradation
- Operating reliability

Customer manufactures sodium bicarbonate which is used for a wide range of individual and consumer products. The quality of the product depends upon the consistency of the particle size distribution with a severe limit on fines content. To satisfy these requirements, low material velocity is required, which was achieved by the pneumatic conveying system.



Basic data:

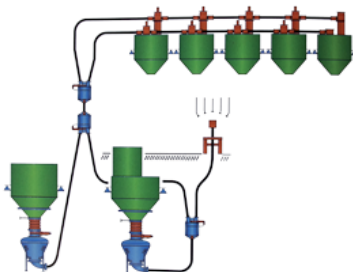
- Sodium bicarbonate
- 1 low velocity conveying system
- 1 reception point
- Ambient temperature
- 22 t./h.

ACE HARDWARE

Objectives:

- Operating reliability
- Accurate weighing
- Low operating cost

A loss-in-weight batch weighment control is provided at each transfer unit. Any of six different materials is introduced to the system for pre-weight and transfer to any of six receiving bins. TiO₂ is an unusual material which exhibits cohesive characteristics from its grain shape even when dry and apparently free flowing.



Basic data:

- Titanium dioxide (TiO₂) and other materials
- 2 X low velocity conveying systems (150 mm)
- 6 reception points
- Ambient temperature
- 25 t./h.