

Mixer feeding from the market leader:

AZO suction weighing systems for large and medium-sized components

8001 SYSTEMS



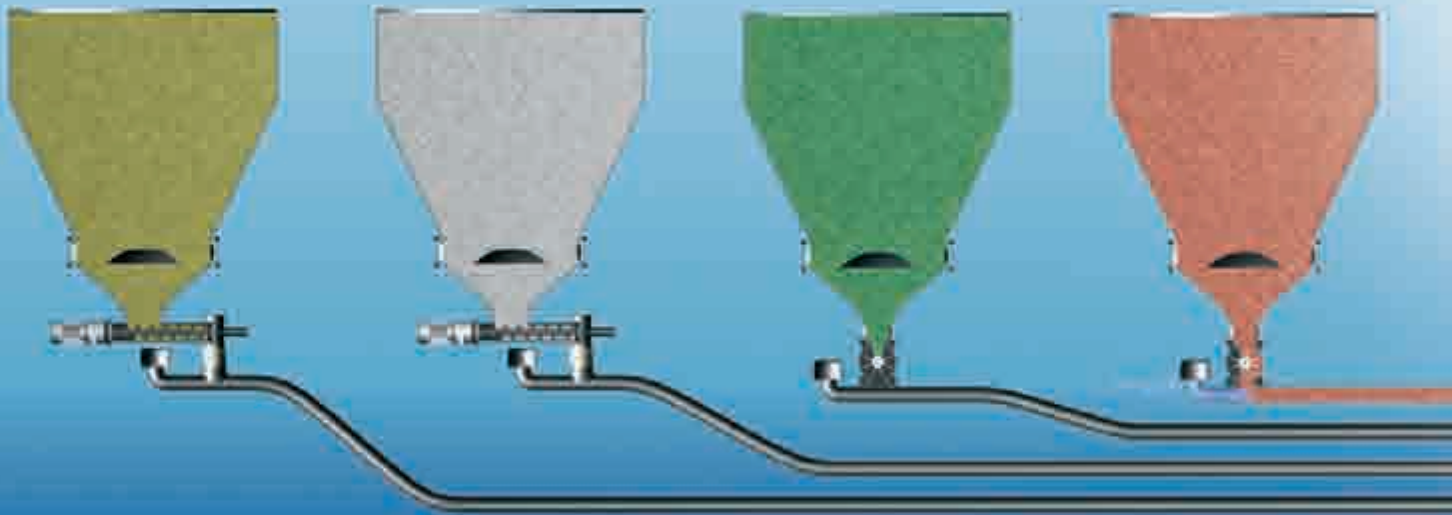
Safe mixer feeding

Economic automation

Space and height
saving design

Flexible system solutions





Discharging, dosing, conveying, consolidation and weighing: Many process steps – one system

Discharging, dosing, conveying, consolidation and weighing – AZO suction weighing systems are truly multitasking. The principle works as follows:

A container in the form of a conveyor scale is put under vacuum using vacuum pumps, ring compressors and/or rotary piston blowers. This vacuum proceeds through the conveying line up to the product intake. The individual components are thus aspirated into the conveying line in a dust-free manner and transported to the conveyor scales. There the product is separated from the conveying air by filters. It remains in the weighing container, where it is accurately weighed.

Discharging:

The vibration bottom has become widely accepted as a discharge system since it is universally usable. It has smooth surfaces and no mechanically moved parts, making it very easy to clean as well as wear and maintenance-free. Water condensation in the silo is avoided as no heated air is blown into bulk materials. In association with a correctly dimensioned silo cone the vibration bottom provides symmetrical descent of the bulk material columns without funnel

and bridge formation, thus guaranteeing "first in - first out".

Dosing:

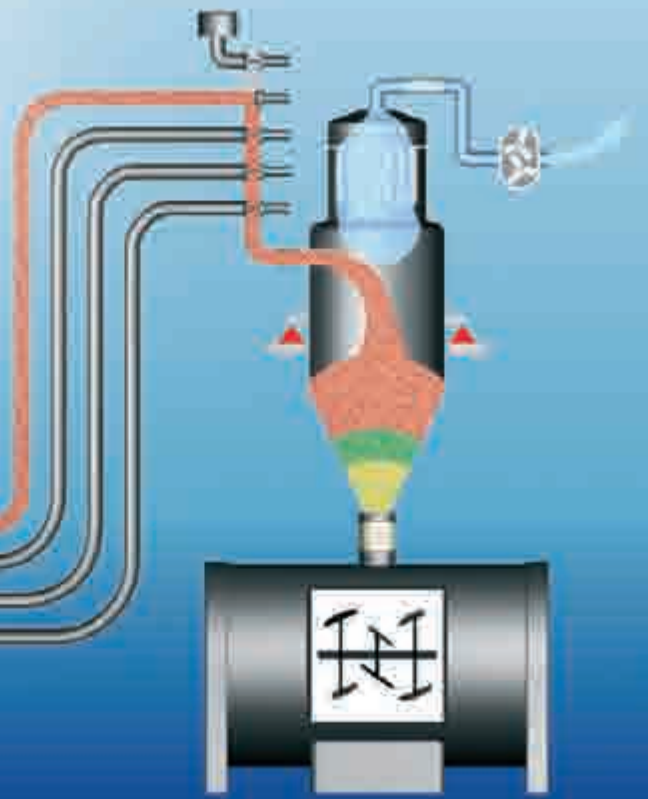
A dosing device is located under the discharge equipment for channelling raw materials into the conveying line: Either a rotary valve or a product feeder with rotating rotor, or a dosing screw with worm thread continuously transfer bulk materials into the conveying line. Dosing screws dose poorly flowing products



Raw material storage in outdoor silos

Dust free product intake and clean frame skirt through suction conveying: left – vibration bottom with dosing screw, right – with dosing rotary valve

Discharging Dosing Conveying Consolidation Weighing



with more precision than rotary feeder and permit lateral offset if necessary. The suction nozzle offers a further alternative for granular, free flowing products.

Conveying/consolidation:

The multi-port valve developed by AZO is the core of the system. It permits a large number of conveying lines to be brought together at a single point. Shortly before reaching the set weight, the emptying suction valve is opened, the conveying line is closed and the multi-port valve is emptied by suction. This means that the in-flight is the same for all components. The good interaction between mechanics and control pays off particularly well with AZO.

Weighing:

The conveyor scales consist of a container on a weighing device, with a built-in compressed-air-cleaned filter unit and a butterfly valve. The container must be the same size as the mixer, while the filter size depends on the conveying system. Filter quick release fasteners and an optional cleaning hatch permit quick and easy dismantling for cleaning at product change. The conveyor scales are placed on three load cells. These record the change

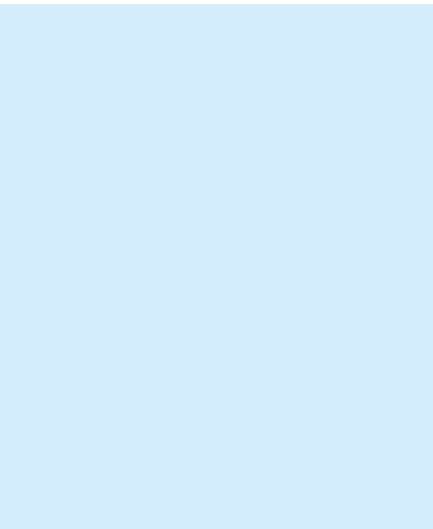
in weight and pass it on to the controller via a measurement amplifier. Due to a minimum movement the weighing cells are extremely durable.



Several conveying lines lead to a common multi-port valve

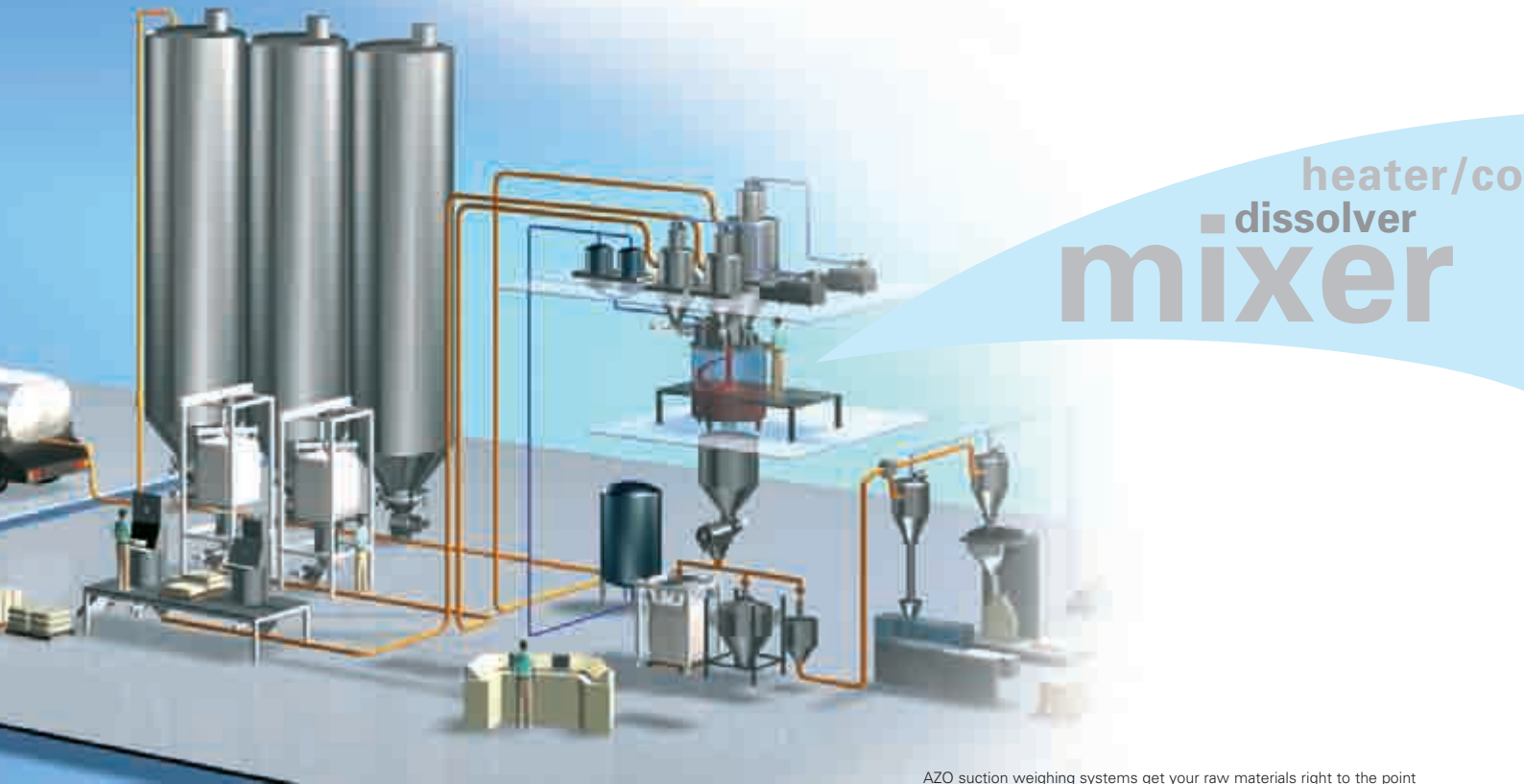


AZO conveyor scales above two kneading units



Vacuum pumps as vacuum generators

heater/co
dissolver
mixer



AZO suction weighing systems get your raw materials right to the point

More than 7,500 convincing arguments for suction weighing systems from the market leader!

Pneumatic suction weighing systems with conveyor scales are today widely accepted for the economic automation of precisely weighed large and medium-sized components. With more than 7,500 suction weighing systems installed, as the inventors of suction weighing technology we are not only the technological leader, but also the market leader for fully automatic mixer loading.

The result of this is a high level of experience with conveying characteristics and flow speeds for many different kinds of bulk materials and liquids which, in combination with innovative

process leading control technology, we introduce all raw materials into your production processes at exactly the right time and in exactly the right quantity:

Right to the point.



Horizontal mixers in the dairy industry



Mixer feeding in the baby food production



Dissolver feeding in the floor production

Feeding of a vertical mixer for profile extrusion

Intake of dry components for the production of fine chemicals

roller mixer
extruder
stirrer
kneading
unit



Your AZO advantages worldwide

- AZO is the market and technology leader for mixer feeding
- Reliability thanks to experience and fully developed technology
- High weighing and dosing accuracy
- Cleanliness during product intake
- Maximum flexibility
- Constant product quality
- Fast recipe change
- Accurate coordination of control and processing technology



Conveyor scales above stirrer containers in the dairy industry



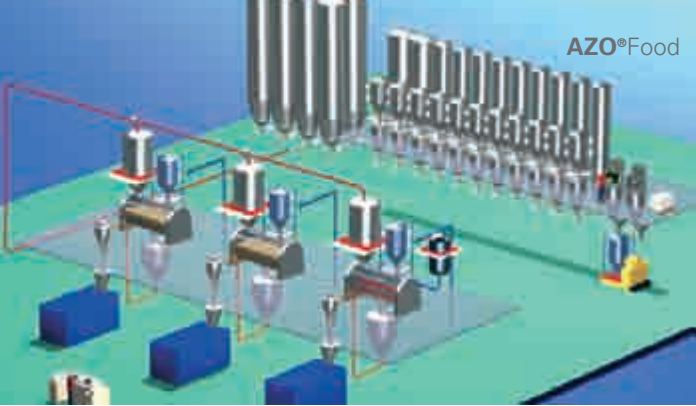
Conveyor scales for intake of bulk quantities



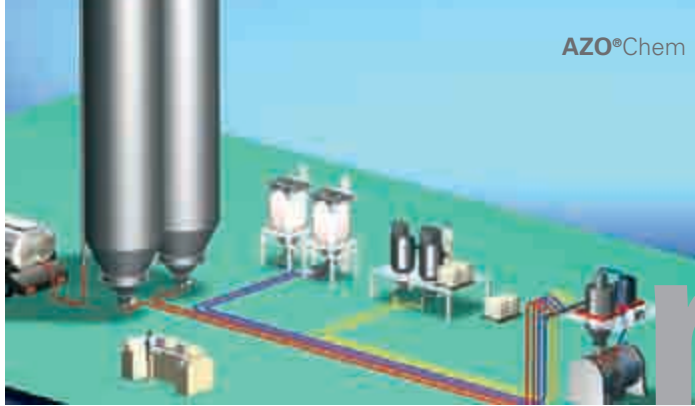
Dissolver feeding in adhesive material production



Feeding of heater/cooler mixer



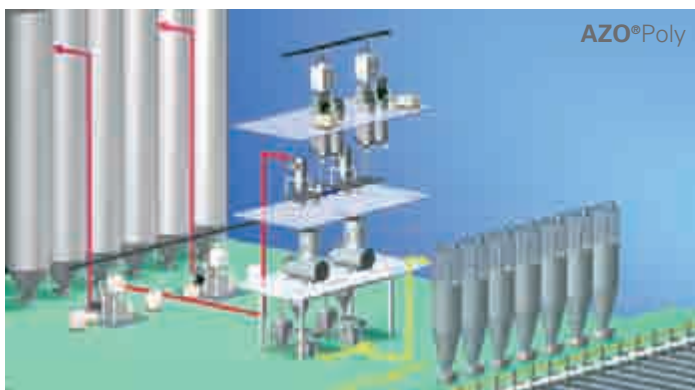
AZO®Food



AZO®Chem



AZO®Vital



AZO®Poly

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Reliable conveying technology for precise mixing results

Whether food, pharmaceuticals, plastics or chemicals – in many industrial production processes, product quality and the success of the company depend crucially on the precise mixing of raw materials. The basis for this is the reliable, high-precision feeding and dosing of individual components into the mixing process.

Whenever there is a requirement to convey numerous bulk components fully automatically to one or more dispensing points such as mixers, kneading units, stirrers, dissolvers and extruders, AZO suction

weighing systems will give you confidence. Even when there are large numbers of components to be delivered, AZO suction weighing systems are not only a reliable, but also an economical solution.



AZO®Food

- Convenience foods
- Spices / flavours
- Baking / baking mixtures
- Bakery products
- Animal feed



AZO®Vital

- Pharmaceuticals
- Dairy products
- Luxury food / tobacco
- Confectionary
- Beverages



AZO®Chem

- Hygiene / cosmetics
- Paints / lacquers / powder coating
- Cleaning products / protective agents
- Fine chemicals / final products
- Basic chemicals



AZO®Poly

- PVC dryblend / extrusion
- Compounding / surface improvement
- PVC coating systems / plastisol
- Additives/master batch production
- Processing of plastics

economical
flexible
reliable
cost free
precise

System benefits of the suction weighing technology:

- Lower process engineering complexity than with pressure conveying
- Optimum adaptation to the throughputs and precision required
- Outstanding allocation possibilities of systems to particular mixing lines
- Height and space saving thanks to horizontal material flow
- Flexible positioning of product intake and weighing containers
- Closed systems

Mixer feeding in the detergent industry



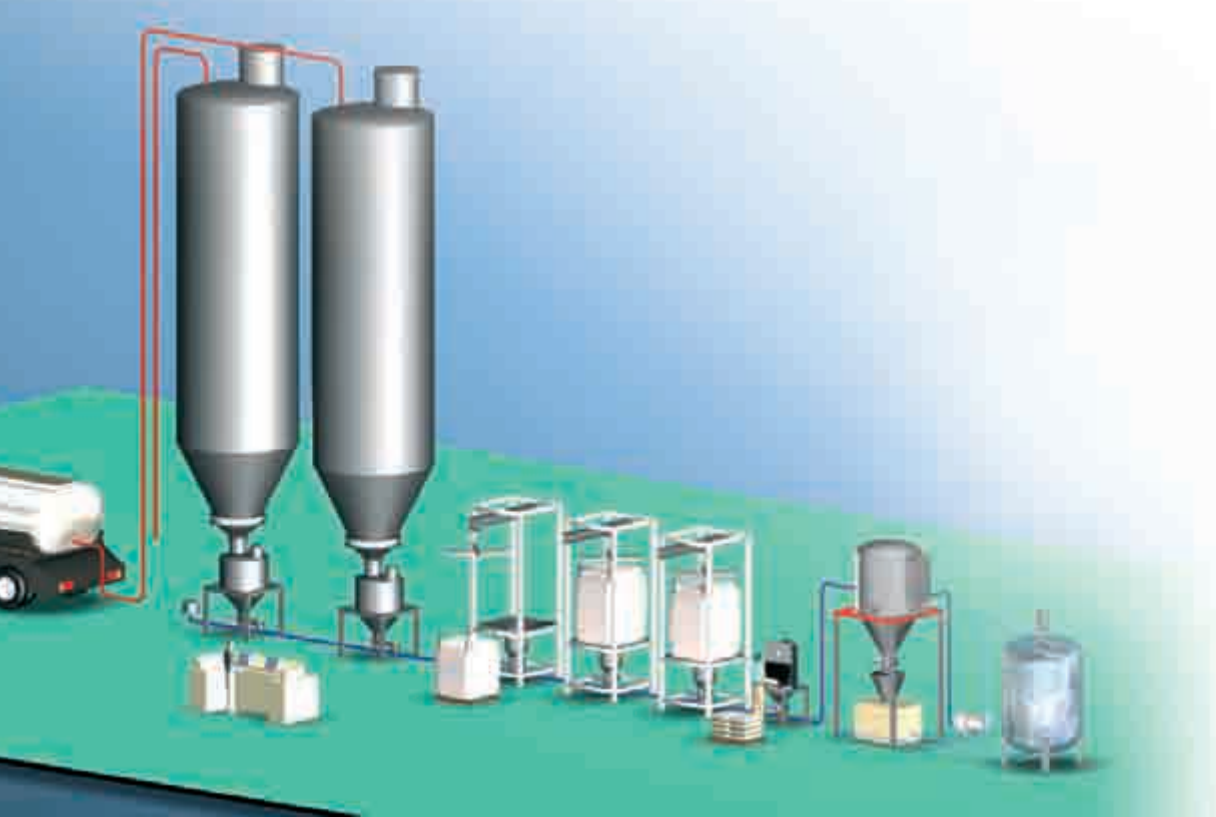
Conveyor scales with weighing device



Process leading and visualization system



Horizontal material flow through suction weighing systems

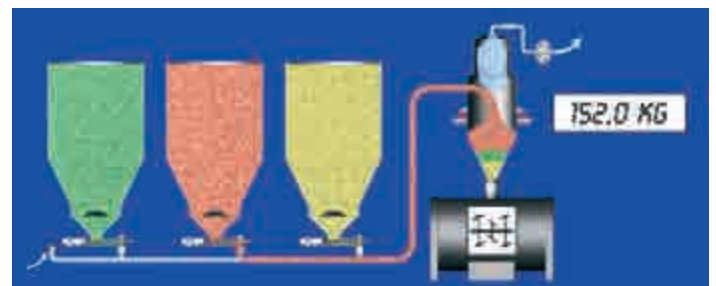


A question of requirements: Mixer loading by single pipe system

With the single pipe system, a conveying line carries products to the conveyor scales from all product feed points such as hoppers, big bag dumping stations and outdoor or indoor silos. The scales control compensates for the different in-flights resulting from varying distances. This increases system accuracy.

Benefits:

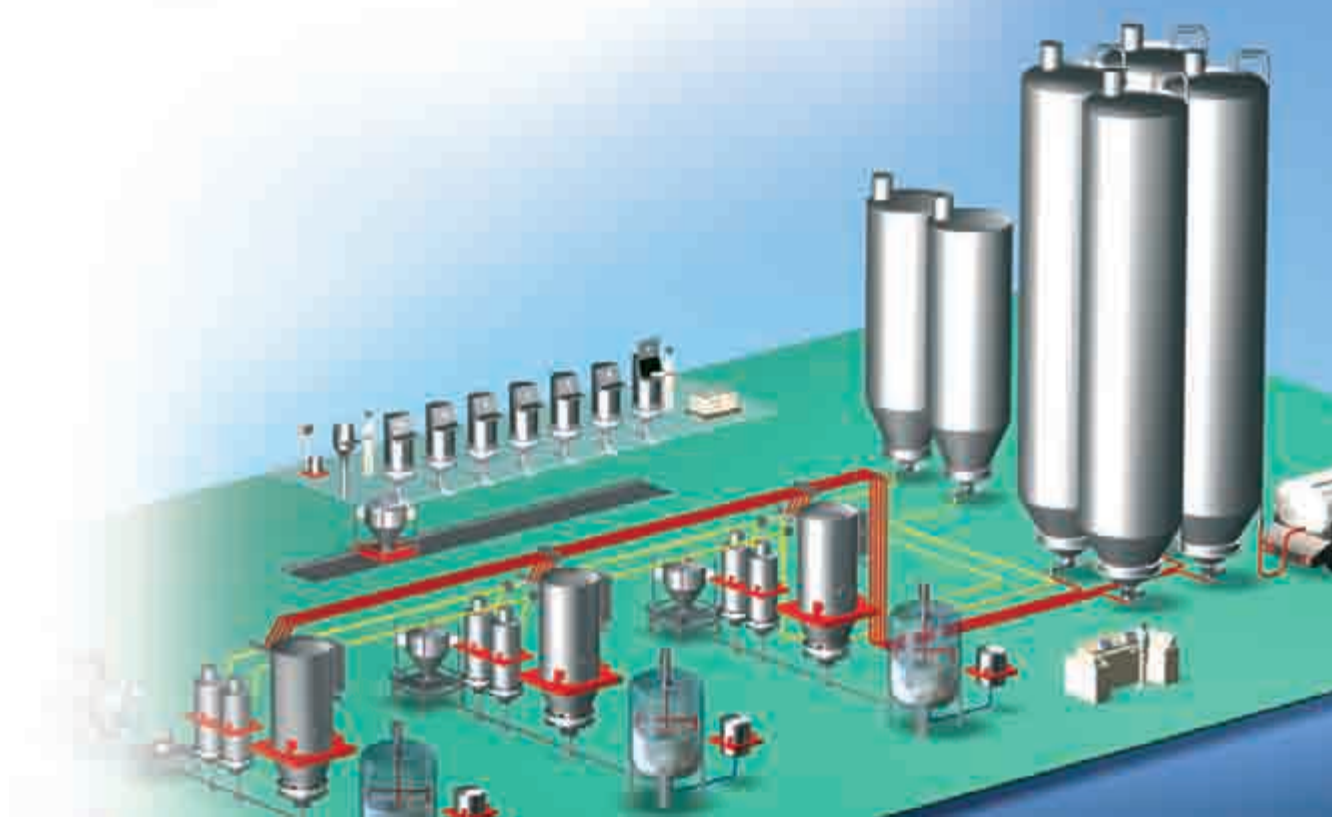
- Lower system costs and lower assembly expenses, since only one pipe is required
- Emptying of conveying pipe after each component
- Conveying, dosing and weighing processes run automatically thanks to recipe specification by the control



Conveyor scales with single pipe system for additives in filler production

Feeding of kneading unit with a single pipe system

Tri-blender feeding in the dairy industry



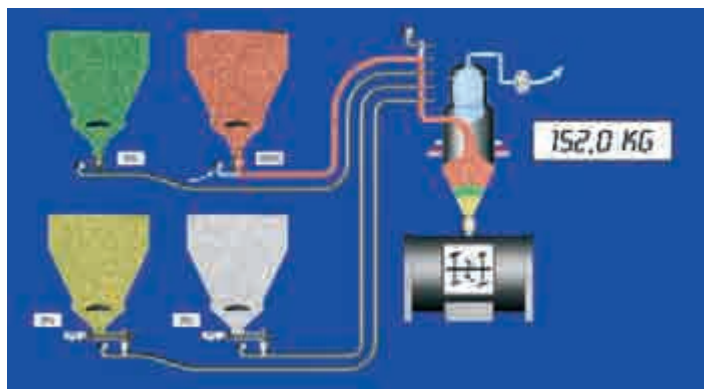
or
Mixer feeding by multi-pipe system

With the multi-pipe system, a conveyor line runs from each product feed point to a multiport valve with fresh air valve, which is connected to the conveyor scales. This system has the benefit that, downstream of the multiport valve, product in-flight is very low. Higher precision is therefore achieved than with the single pipe system.

Benefits:

- Suitable for many components
- Fast component change possible
- Very high dosing precision
- Product intake can be distributed between different locations by the multiport valve

Mixer feeding for baking mixes



Conveyor scales with multiport valve



With suction weighing systems the number of components is almost unlimited

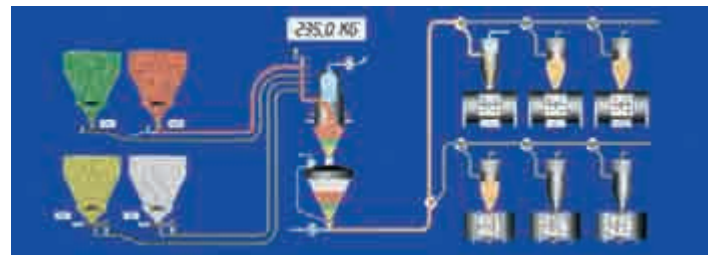


Perfect combination: Central weighing systems from AZO

A central weighing system is available for many intake points and discharge points. It combines the benefits of suction weighing and pressure conveying systems. With this system, individual components from the product intake points are sucked into central conveyor scales equipped with an electromechanical weighing device and weighed. The weighed batch is then emptied into a buffer container and conveyed from this point by a pressure conveying system to consumers such as kneading units, mixers or stirrers. In order to achieve high throughputs, the next batch is already assembled in the central scales during conveyance.

Benefits:

- Perfect solution at many intake and discharge points
- Accurately weighed batches for many consumers
- Optimum for long conveying distance and high throughputs
- Simultaneous weighing and conveying to several distant consumers



Central weighing station with conveyor scales and buffer container for downstream conveying



Central weighing station for long-lasting bakery products



Recipient hopper for flour and sugar in a system with central weighing system



Mixer feeding in the horizontal material flow for convenience foods

Special solutions for special requirements

Every AZO solution is an individual solution in which your requirements are the focus of our attention. Our sturdy and flexible modular technology ensures that the entire system is also economical and offers maximum flexibility. It permits optimum solutions for both the integration into existing systems, and in the construction of new production plants.



Process leading and visualization system

AZO suction weighing systems are suitable for a very wide range of uses and comply with current production and safety requirements, such as the ATEX guidelines and CE conformity. The well-engineered technology is complemented optimally by intelligent control technology from our subsidiary, hsh – systeme für prozess-IT. The smooth interaction of mechanics and control ensures the highest dosing and weighing accuracy

and complete recipe documentation and connection to host systems depending on your requirements. Conveyor scales can also be installed as negative scales for adherent and poor flowing products such as titanium dioxide. Optional test functions such as automatic subsequent calibration and our double check system further increase the production reliability.



Conveyor scale balance with double check device



Dust-free discharge into the kneading unit



Feeding of many components into a heater/cooler mixer



Conveyor scales with dosing screw

Always an economical solution – from the market leader for mixer feeding systems

Whether bulk materials, ingredients in powder form, flavours, additives, micro components or liquids – reliable AZO feeding and process leading systems provide economical, fully automatic mixer feeding in every situation.

AZO systems for the full automation of your raw materials in the mixer feeding field:

For large and medium-sized components in powder form:

AZO suction weighing systems

For medium-sized and small quantities in powder form:

- AZO COMPONENTER®
- AZO DosiBox® and DOSINENTER®
- AZO ShuttleDos®

For liquids:

AZO weighing systems for liquids

For micro quantities:

ManDos, the operator-guided, manual weighing centre



AZO suction weighing systems, the optimum solution for large and medium-sized components



AZO COMPONENTER® small quantity automation from the market leader



AZO DosiBox® and DOSINENTER®, inexpensive automation of small quantities



AZO ShuttleDos®: The new dimension in speed during batch preparation



Patented AZO weighing systems for liquids



Operator-guided weighing of micro quantities with ManDos

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