

AZO®MIXOMAT - economical transporting, dosing, weighing and mixing with an ingenious system

**Four functions,
one system**

**Easy expansion into
more raw material
components**

**Weighing of all
components**

**Quick cleaning
with large door**

**Compact
construction**

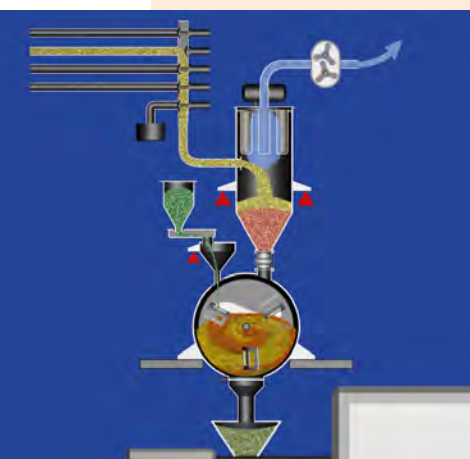
Preferred applications

The MIXOMAT is particularly well suited to discontinuous, gravimetric loading as well as to mixing and dyeing of granulate exactly as specified in the recipe, with masterbatch, re-work, pigments and additives. It can be used for medium to high throughputs values when loading compounding systems, blowing machines and foil lines. Various designs are available, covering a performance range from 150 kg/h to 2.5 t/h. Combining the process stages of transporting, dosing,

weighing and mixing in one device achieves an exemplary level of efficiency. The MIXOMAT can easily be cleaned and has proved to be effective in meeting exacting requirements in terms of quality and reproducibility. With this device, it is possible to register and report on the exact material consumption at any time, even with minor components. It can be used both with individual loading or in collective loading systems with shared blower and secondary

filter. The MIXOMAT can be combined excellently with high-precision dosing and weighing units such as FLEXIDOS® and AZODOS®, as well as with continuous gravimetric systems. By working together closely with the manufacturers of extrusion machines, AZO has developed modules that are precisely attuned for the extruders.

SYSTEMS



Special advantages

- Transporting, dosing, weighing and mixing in one compact, economical system
- Simple supply of up to 30 components via switching valves
- High repetition accuracy due to accurate weighing and recording of all components
- Rapid colour change and easy cleaning
- Precise throughput registration for each processing machine
- No need for differential dosing scales
- Compact, pre-assembled modules for rapid startup

System description

The MIXOMAT consists of a conical housing with a filling and ventilation pipe as well as a large cleaning door with quick-release fasteners and sight glasses. The mixing tool is driven by a geared motor. The discharge valve is operated by compressed air. A support bracket is provided for setup and attachment. Designs in mild steel or stainless steel are possible. It is recommended that the ground and polished finish be

used for special requirements, e.g. thorough cleaning when pigment has been used. There are three different system variants in all cases: MIXOMAT mixer, MIXOMAT scale and MIXOMAT conveying scale.

AZO.®
SOLIDS

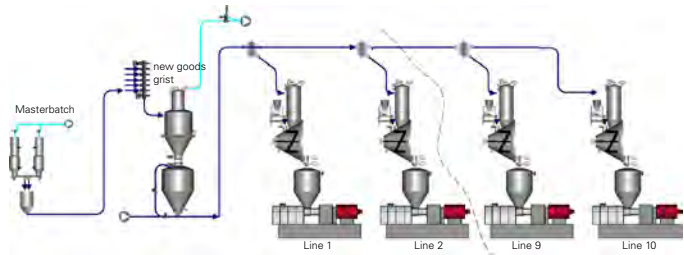
AZO SOLIDS Systems

AZO®MIXOMAT mixer

System description

It is recommended that the MIXOMAT mixer be used for high throughput levels as well as for loading many processing machines with different batches. Granulates, dyes and additives are precisely weighed and prepared in one or more central weighing stations. The components are then transported into the MIXOMAT mixer which is located on each processing machine, where they are homogeneously mixed. The specifics of the procedure are described below.

The main component and the intermediate components are transported into a large and a small conveying scale under recipe control via diverting valves, where they are weighed at the simultaneously. The precisely weighed batch is emptied into a collecting vessel which also serves as a pressure vessel, and is then transported to the MIXOMAT by means of pneumatic pressure conveying. Masterbatches and additives that are difficult to process are dosed into an ultra-small quantity scale where they



AZO®MIXOMAT solution with central weighing

are weighed to the gram and also transferred into the MIXOMAT. The homogenous mixture is used for loading the subsequent processing machine, such as extruders, blowing machines, etc.



AZO®MIXOMAT mixer with large cleaning door



AZO®MIXOMAT mixers above processing machines

AZO®MIXOMAT scale

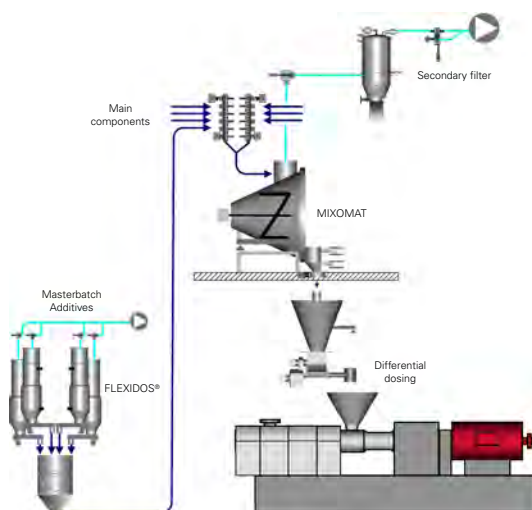
System description

The MIXOMAT scale is an economical solution for weighing, dyeing and mixing in a single unit. In this system, the mixer itself functions as the conveying scale. It is simply supplemented by a weighing device and a filter with compressed air flushing. In collective loading systems, the MIXOMAT scale can be used with an angle-stop valve, primary filter and a shared secondary filter.

A negative pressure is generated in the mixer that is integrated into a frame with an electromechanical weighing device. This negative pressure draws material from the silos (or alternative storage

places), through the diverter valves, conveying lines, and finally into the mixer. Exact dosing is achieved by operating the dosing equipment (e.g. dosing screw/rotary valve etc) in coarse and fine modes. Shortly before the final nominal weight is reached, dosing is terminated, the conveyor line is closed and the fresh air valve on the switching valve is opened. This means the slight amount of in-flight material is the same for all components, which leads to very accurate results.

Here too, the small quantities such as masterbatch or additives are dosed into a small component



AZO®MIXOMAT scale, small quantities are pre-weighed in the AZO FLEXIDOS®

scale by means of a dosing station set up level with the floor, where they are weighed with accuracy to the gram and also drawn into the MIXOMAT.

Alternatively, the small component weighing can be performed directly using the MIXOMAT and the pre-weighed batch added in the free fall.



AZO®MIXOMAT scale for loading foil blower extruders



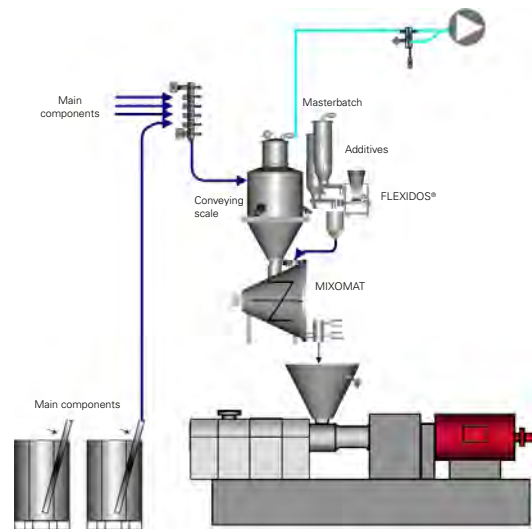
AZO®MIXOMAT scale above processing machine

AZO®MIXOMAT conveying scale

System description

This is an appealing solution for large throughput rates combined with high accuracy. A conveying scale is connected ahead of the MIXOMAT mixer, thereby allowing a new batch to be weighed in the conveying scale during mixing. This system can be arranged both directly over the processing machine, or next to it. Loading is then performed either in the free fall, or the batch is carried across using dense flow transport.

The components are drawn into a conveying scale through a switching valve according to the recipe, weighed precisely there and then transferred to the MIXOMAT mixer. Small quantity weighing (masterbatch and additives) is performed in parallel with an AZO FLEXIDOS® involving an ultra-small quantity scale and input directly into the mixer. The homogeneously mixed batch is then ready for loading the processing machines.



AZO®MIXOMAT conveying scale directly over extruder, masterbatch is weighed separately, additive in powder form is negatively weighed into the masterbatch scale using AZODOS®



AZO®MIXOMAT conveying scale for loading an extruder



AZO®MIXOMAT conveying scale with secondary filter

Example of a complete system

The large quantities are extracted from silos and filling hoppers by means of a pneumatic suction weighing system, drawn into a conveying scale by the MIXOMAT mixer and weighed precisely. In parallel to this, the small quantities such as additives, dyes, stabilizing agents, etc. are weighed with accuracy down to the gram in a FLEXIDOS® station

set up level with the floor, before also being transported into the conveying scale pneumatically. Once all the components required by the recipe are in the conveying scale, the entire batch is emptied into the MIXOMAT mixer and homogeneously mixed. In the past, a mixer hopper was frequently used as a buffer, Now, the mixture is emptied directly

into a differential dosing device. This offers the advantage of requiring less cleaning when the product is changed over. Product quality can be increased significantly by loading the extruders with homogenous pre-mixtures made in the MIXOMAT. In parallel to this loading, additional components such as glass fibers are supplied in

big bags. These are securely docked in a big-bag unloading station using a dust tight docking mechanism, and the product is transferred to a differential dosing scale. This component, like the main component, is supplied to the extrusion process according to a set point that is specified by the extruder.



Outdoor silos for large quantities



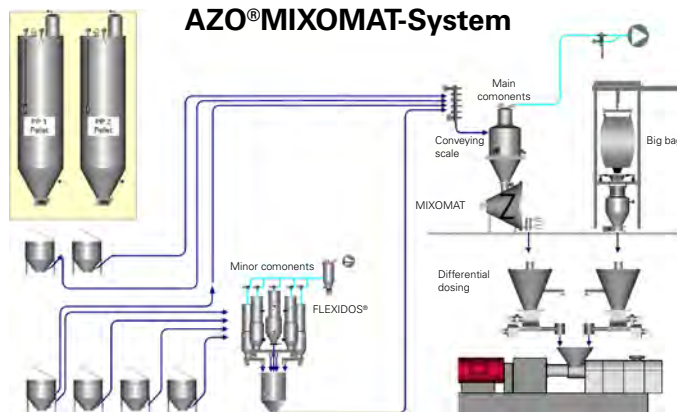
AZO MIXOMAT system



Big bag discharge stations, with two FLEXIDOS® stations next to them



Feeding hopper



Differential dosing scale AZODOS®



Simple feeding hopper for granulate



FLEXIDOS® stations, pneumatically loaded



Control terminal with process visualization