

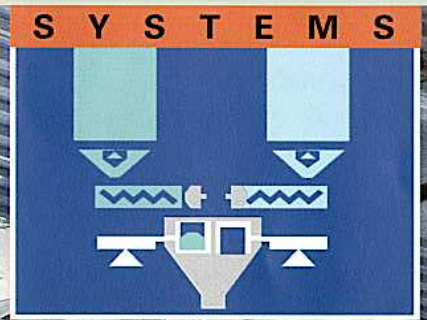
AZO COMPONENTER®

for the precise automatic
metering, weighing and
feeding of minor and
micro ingredients

Minor and micro ingredients in the production process represent a special challenge in the automation of ingredients.

These critical ingredients to your process can be easily automated with the AZO COMPONENTER®. This innovative and highly flexible machine automatically weighs with high accuracy and then transfers the ingredients to the next step in your process.

8400



AZO.

INGREDIENT AUTOMATION

Automation for minor ingredients – an essential aspect of today's process

The AZO COMPONENTER® forms an important component in your fully automated system

The task

Minor and micro ingredients in the production process represent a special challenge to ingredient automation systems.

Such a system has to automatically weigh a wide variety of ingredients. This task can only be accomplished with a modular system which can be adapted to handle your specific requirements.

The solution

The COMPONENTER® from AZO provides you with a well-designed system which can fulfill these requirements in all industries.

All those tedious weighing tasks, which in the past had to be done manually, can now be handled by the AZO COMPONENTER® – fast, reliably and with great precision. This flexible system can be easily integrated into existing processes.

It does not matter if you produce food products, pharmaceuticals, chemicals or plastics, the numerous AZO COMPONENTER® versions can provide the minor and micro ingredients required for your production – rapidly, simply and accurately.

And expanding the system at any time is no problem due to our flexible and modular control systems.

The task: weighing a wide range of ingredient weights in both the gram and kilogram ranges

The operating principle

All the AZO COMPONENTER® versions operate according to the same simple principle. The raw materials are fed into a surge bin in the upper section of the AZO COMPONENTER®.

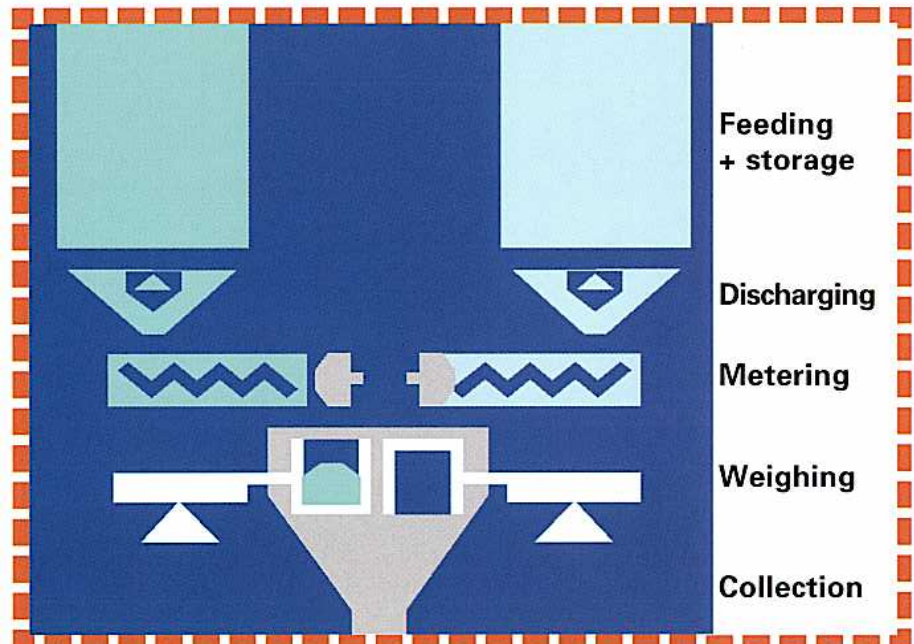
Upon command, the AZO COMPONENTER® discharges with the help of the vibrating discharger and meters with a vibrating metering screw.

Two systems

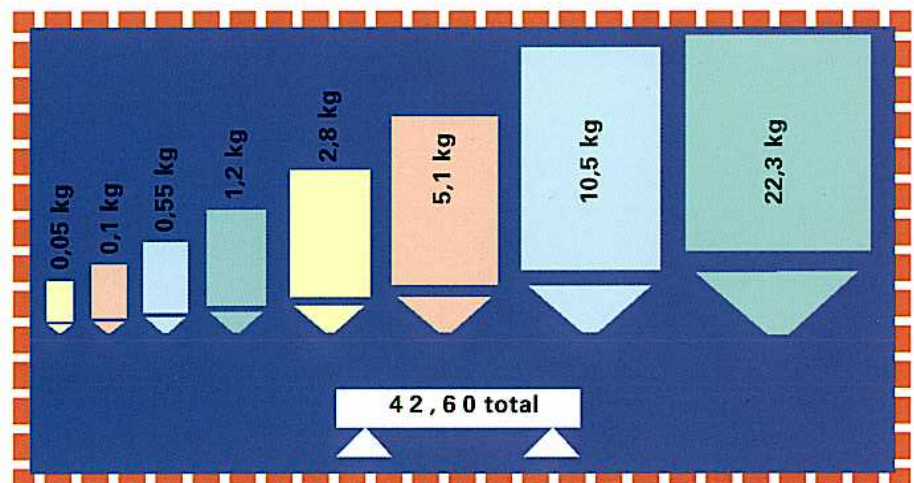
The right system for your requirement is chosen depending on the products and the plant layout. Numerous COMPONENTER® versions are available to suit all applications.

There are two basic types of arrangements:

- circular
- linear



The AZO COMPONENTER® system: precise weighing of all minor and micro ingredients in a modular system



AZO COMPONENTER® – The decisive advantage

The advantages of the AZO system

- **Separate scale for each ingredient**
- **Highly accurate metered additions**

Since one of the basic truths of scale systems is, "If you want precise weighing, you must have precise metering", every ingredient has a separate vibrating metering screw.

- **Highly accurate scale**

Completely separate from the collection vessel (no wiring, compressed-air or other flexible connection).

- **Reliable discharge**

The AZO COMPONENTER® scale is completely rotated for discharge. In addition, a special mechanism ensures that any residue is completely removed.

Further benefits

for deliveries and storage

- Flexible system for all types of containers (bags, drums, big bags, portable bins, silos).
- A special connecting system allows quicker changes of big bags and containers according to formula requirements.
- Dust-free feeding of products into the hopper or pneumatically into receiving bins or silos.

for discharging

- Reliable discharge, even for ingredients with poor flow characteristics, with the universally applicable AZO vibrating discharger.
- Highly accurate metering with the use of a vibrating metering screw with cut off valve.

for weighing and metering

- Very precise, automatic weighing in a wide range of weights.
- Fast batching times with simultaneous weighing.
- Serves several mixing lines.
- Easily extended at any time due to its modular design.

for handling and cleaning

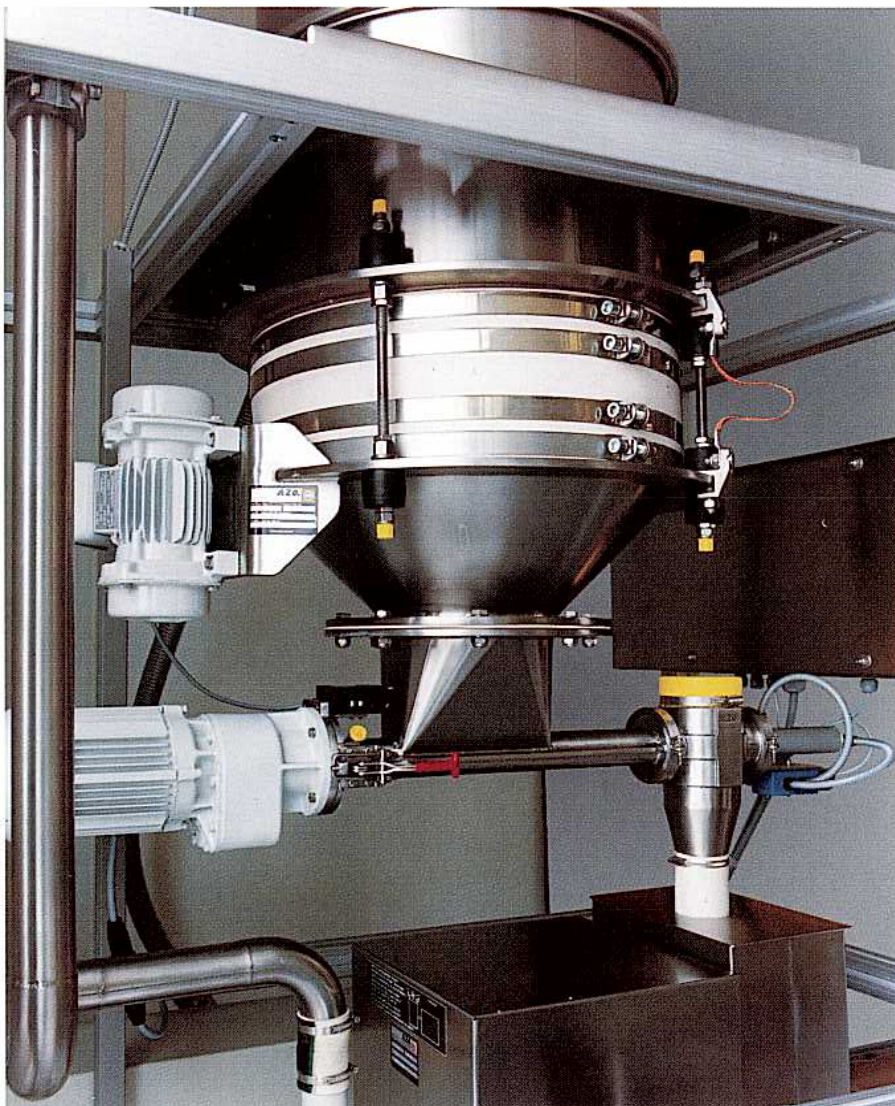
- The closed system provides dust-free operation.
- Complete enclosures are available for hazardous ingredients.
- Easy to clean stainless steel construction.

for collecting

- Can be designed to meet the requirements of your process.
- Circular arrangement collection hopper can be equipped with an agitator for pre-blending the batch, and with complete batch check weighing.
- In the linear arrangement, alternative use of a travelling collecting hopper, travelling scale, containers on an indexing belt, or container scale.

for controlling, monitoring and recording

- The AZO COMPONENTER® forms a subassembly which can be fully integrated into the AZO process control and graphic display system.



AZO COMPONENTER®

For maximum flexibility

Storage, discharging and metering in the upper section of the AZO COMPONENTER®

Feeding from bags:

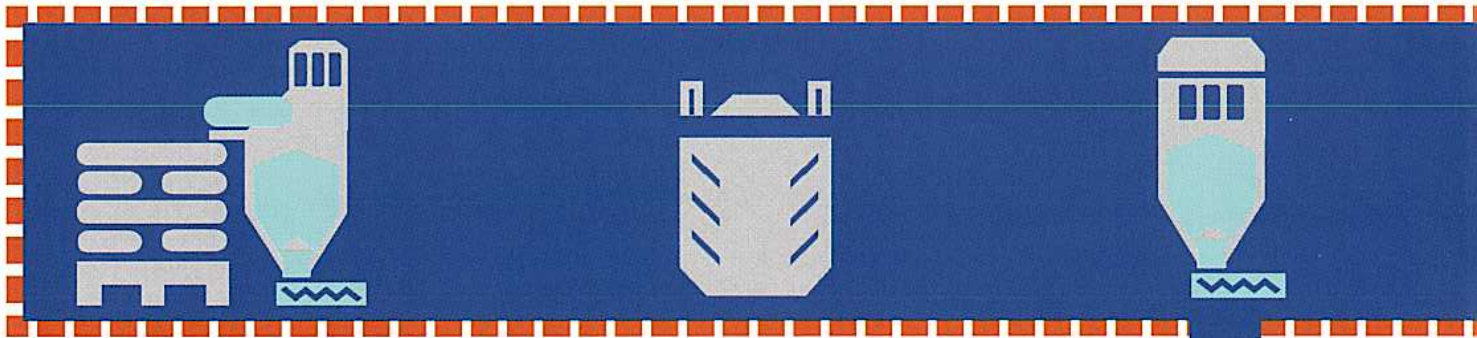
manual bag dumping;
a dust collector can be incorporated
as an option

Feeding from big bags:

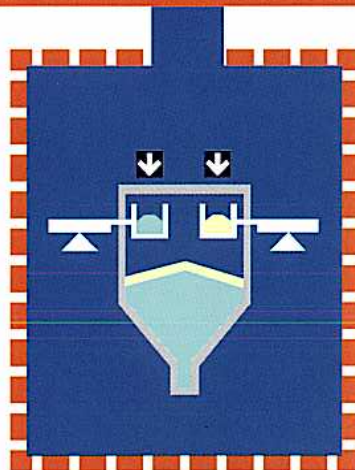
feeding station for big bags;
a special discharge mechanism can
be provided as an option to ensure
complete discharge

Receiving bin:

or surge hopper with filter;
for direct pneumatic feeding



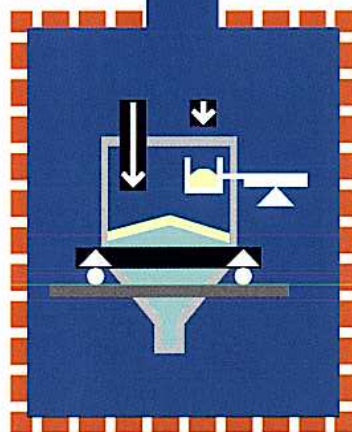
Weighing and collecting in the lower section of the AZO COMPONENTER®



Operating principle

Weighing and collecting:

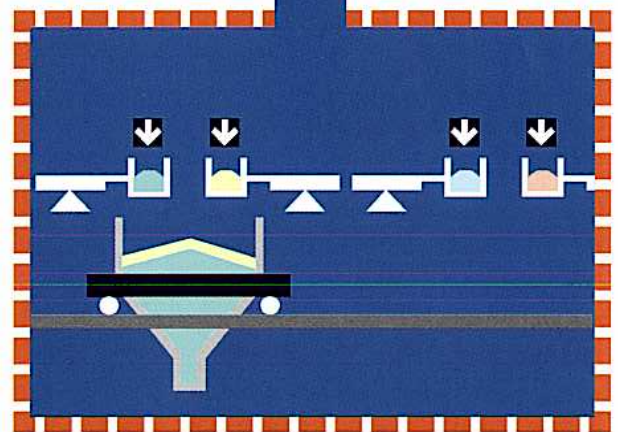
Circular arrangement of
several individual scales in a
stationary collecting hopper;
an agitator can be provided
as an option.



Operating principle

Weighing and collecting:

A travelling scale weighs and
collects the minor ingredi-
ents. Micro ingredients are
weighed by means of an
additional AZO COMPO-
NENTER® scale.



Operating principle

Weighing and collecting:

A travelling collecting vessel
collects the ingredients. These
are weighed using one AZO
COMPONENTER® scale for
each ingredient, providing
extremely fast batch times.

Discharge of ingredients:

Discharge directly into the
mixer or with a pneumatic
conveying system.

Discharge of ingredients:

The ingredients can be dis-
charged either directly into
the mixer or into pneumatic
conveying systems.

Discharge of ingredients:

The ingredients can be dis-
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Monitoring



Controlling



Recording



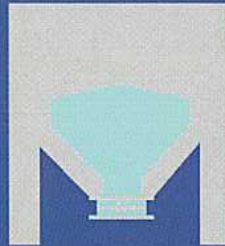
AZO DOSITAINER® :

a portable container with metering screw for direct metering into the scale; enables change of ingredient without having to clean out any residue

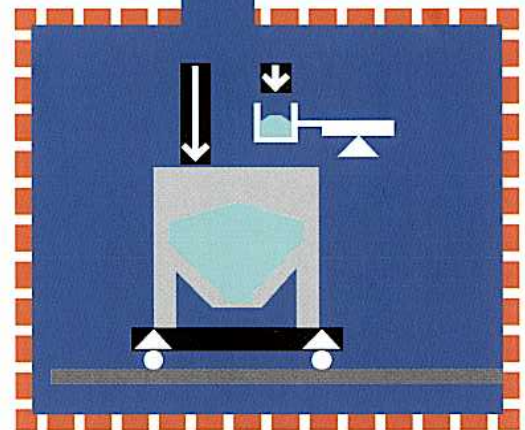
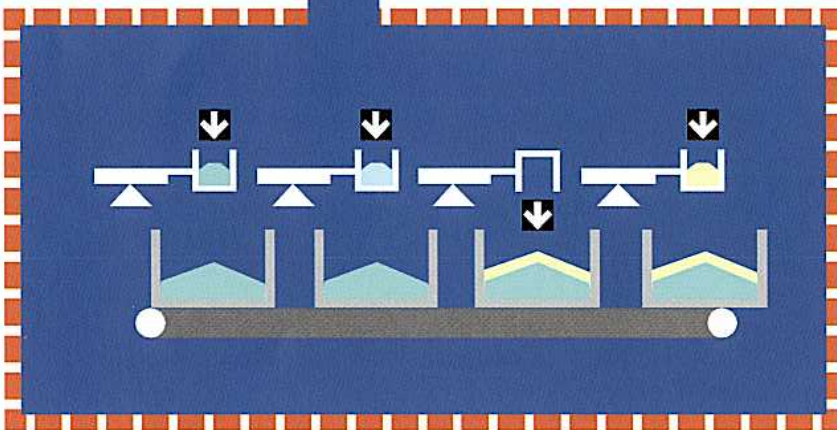
Interchangeable container:

containers with discharge valve for mounting on container discharge station

Different types of containers can be used in any combination



Choose a module which best suits your requirements



Operating principle

Weighing and collecting:

Using one AZO COMPONENTER® scale for each discharge station, ingredients are weighed separately and then collected via coded containers on an indexing belt (completely free from contamination).

Discharge of ingredients:

Feed into the mixer is done manually.

Operating principle

Weighing and collecting:

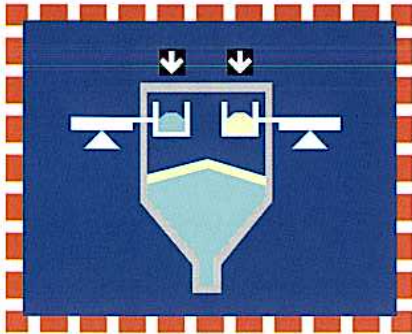
The batch container is mounted on a travelling scale. Weighing takes place sequentially and directly in the container; micro ingredients are weighed with stationary AZO COMPONENTER® scales.

Discharge of ingredients:

Discharging the batch container into the mixer is done manually.

AZO COMPONENTER® · Example N° 1

Circular arrangement



Preferred applications

A cost-effective solution for the automatic weighing of up to eight micro ingredients.

Other details:

- simultaneous weighing
- high batch frequency: up to 40 batches per hour

Circular versions can be allocated to different formula types (i.e. light and dark product groups).

Operating principle

The storage bins used in this system are usually bag dump stations or receivers fed from a pneumatic conveying system, arranged in a circle above the collection hopper. Each ingredient has its own discharge, metering and weighing unit. This enables a fast method of operation with several weightings taking place simultaneously. This system can feed of several mixing lines due to the fast operation.

All the AZO COMPONENTER® scales are mounted in a common collecting hopper and discharge into this hopper. From there the ingredients are conveyed pneumatically to a receiver over the mixer or, in the ideal situation, transferred directly into the mixer. Depending on the properties and conveying characteristics of the ingredients, it sometimes is best to pre-mix them in the collection hopper and blend in a carrier agent prior to pneumatic conveying.



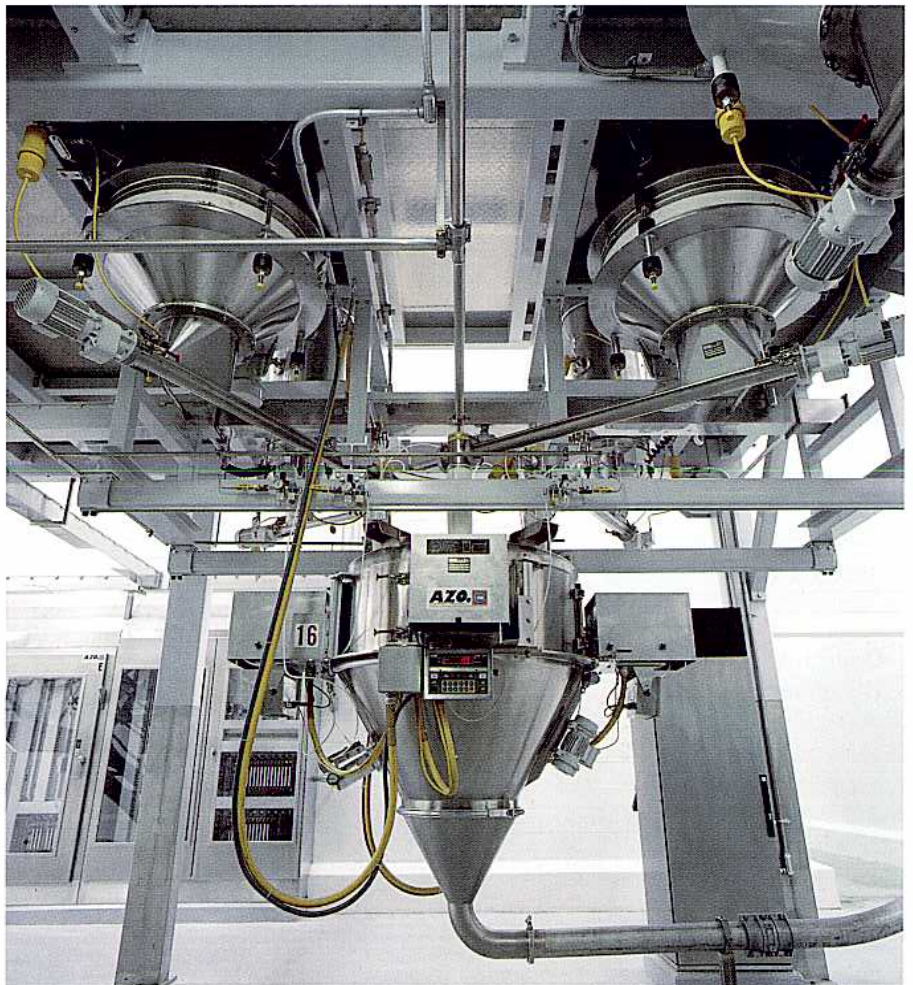
Circular arrangement of AZO COMPONENTER®



Collecting hopper with AZO COMPONENTER® scale



Collecting hopper can be moved for cleaning



Circular arrangement of AZO COMPONENTER® for four minor ingredients

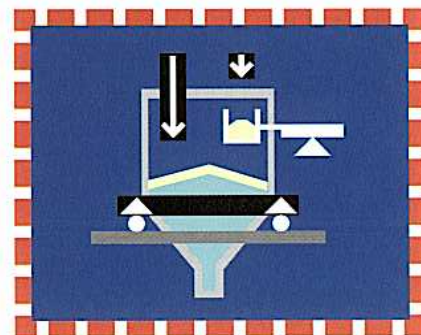
AZO COMPONENTER® · Example N° 2

Linear arrangement with travelling scale

Operating principle

The storage bins used in this case are usually bag dump stations or receivers fed by a pneumatic system, or portable containers with discharge and metering units, arranged opposite each other in rows. The feed hoppers can be filled from a central aisle or from the outside according to the particular layout. Each ingredient has its own discharge and metering unit.

The minor ingredients, are weighed sequentially according to the recipe, are collected in the travelling hopper and discharged at one or more stations (i.e. mixers or pneumatic conveying systems). Minor ingredients are weighed directly in the travelling scale, micro ingredients in the special, highly accurate AZO COMPONENTER® scale.

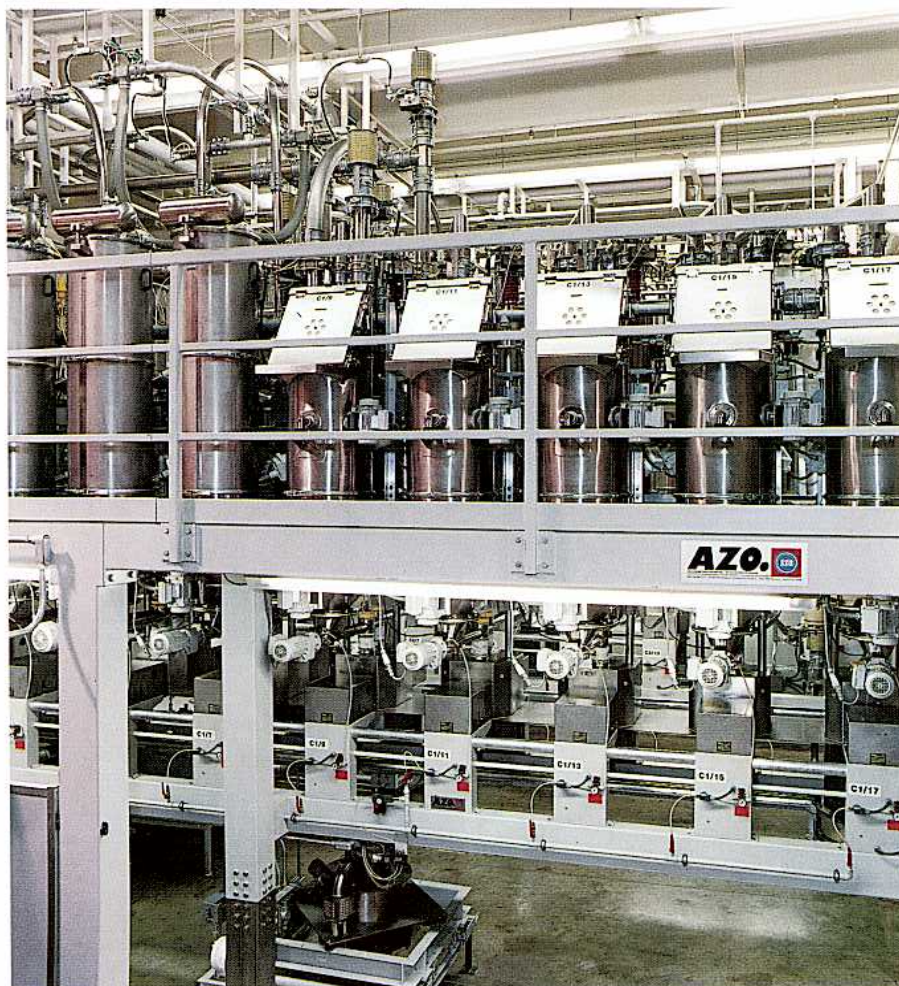
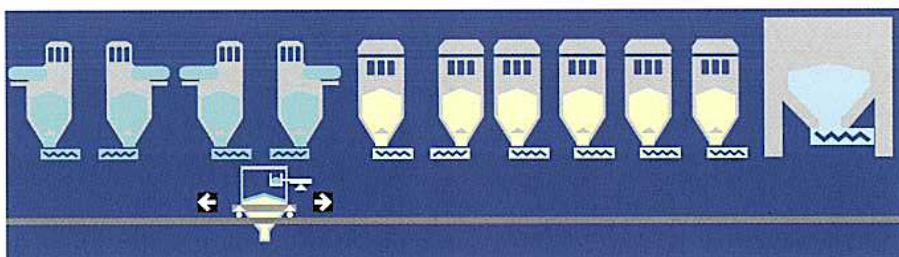


Preferred applications

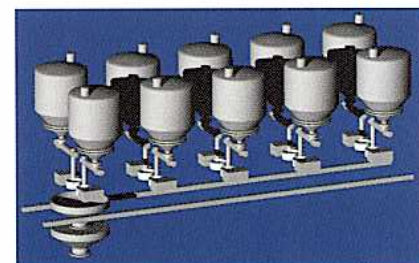
Practical solution for weighing many minor ingredients.

Other details:

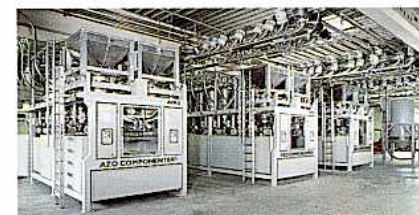
- sequential weighing
- batch frequency: up to 10 batches per hour
- several discharge points are possible



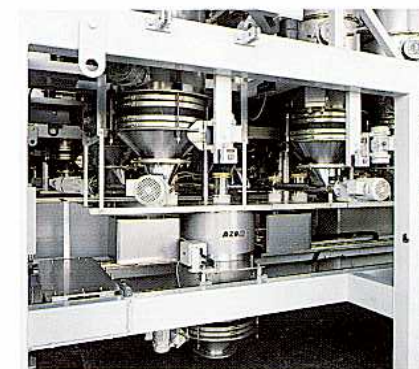
Linear arrangement of AZO COMPONENTER® for eighteen minor ingredients



Linear arrangement of AZO COMPONENTER® with two rows



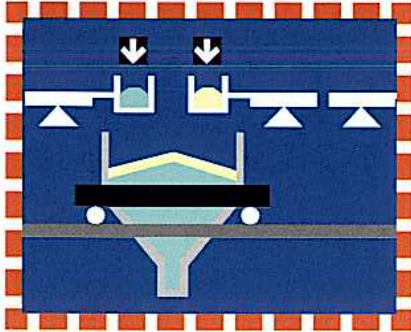
AZO COMPONENTER® lines



Travelling container with integral AZO COMPONENTER® scale

AZO COMPONENTER® · Example N° 3

Travelling hopper and individual scales



Preferred applications

A very efficient version for the weighing of a large number of minor ingredients with higher batch frequency.

Other details:

- several weighments simultaneously
- batch frequency: up to approx. 20 batches per hour
- easy to clean
- several discharge points are possible

Operating principle

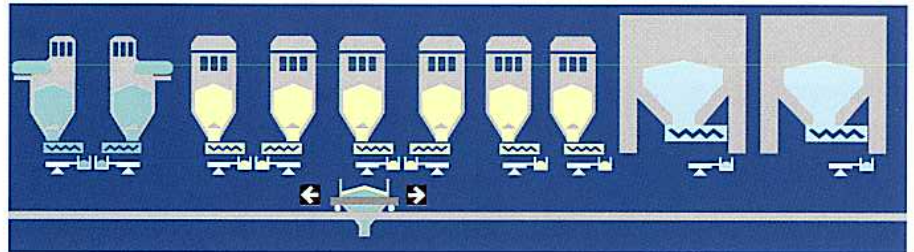
Here too, the containers can be arranged opposite each other in rows.

Each ingredient has its own container, discharge and metering unit, and scale.

A higher batch frequency is possible with this version due to the si-

multaneous weighments optimized movement of the collecting hopper according to the recipe. The use of containers permits great flexibility and speed when changing over to other products.

The cleaning requirements for this version are very low.



Linear arrangement with container



Discharging containers into the feed hopper



Travelling collecting hopper and individual scales

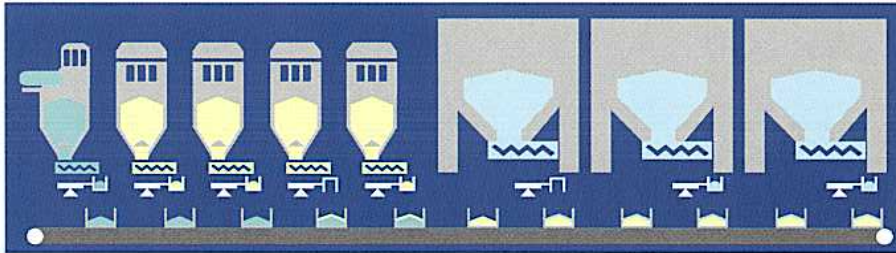
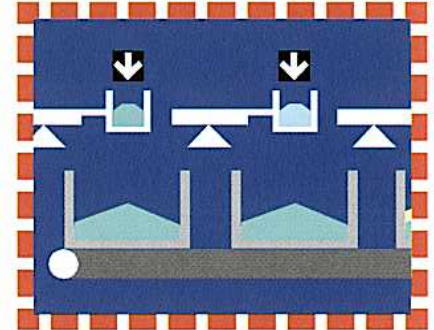
AZO COMPONENTER® · Example N° 4

Containers on an indexing belt and individual scales

Operating principle

Bar-coded containers are used here instead of the travelling collection hopper. These containers are transported on an indexing belt beneath the metering stations where they collect the automatically and precisely weighed minor ingredients.

The bar-code identification on the small filled containers ensures that the correct ingredients are fed into the mixer with no cross contamination.



Preferred applications

The optimum solution for weighing a large number of minor ingredients at a very high batch frequency.

This system is particularly suitable for difficult ingredients (pigments, flavors, etc.) which have to be integrated into a fully automated system.

Other details:

- several weighments simultaneously
- batch frequency: over 100 batches per hour
- no contamination or cross-contamination
- each container collects one batch



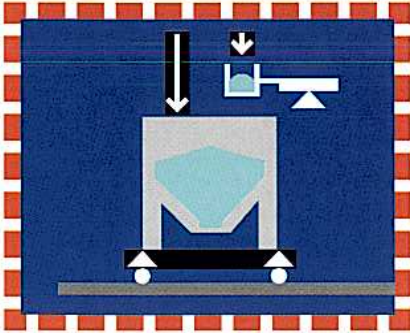
Linear indexing AZO COMPONENTER®



Collection by the use of indexing containers

AZO COMPONENTER® · Example N° 5

Container on travelling scale



Preferred applications

An efficient solution for assembling batches containing difficult ingredients, while at the same time offering optimum batch tracking.

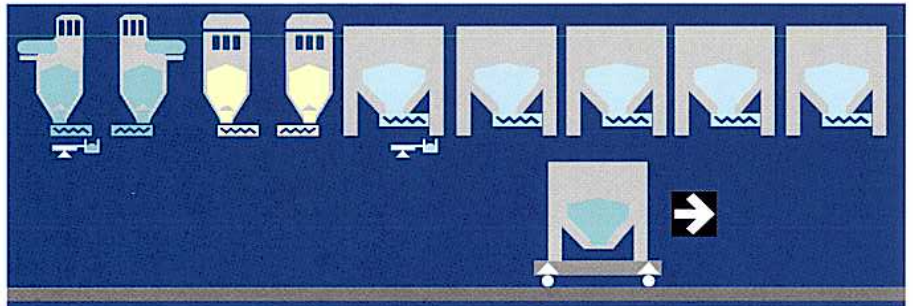
Other details:

- sequential weighing
- batch frequency:
10 batches per hour
- no contamination or cross-contamination (frequently used in the pharmaceuticals industry)

Operating principle

The batch container, on a floor-mounted scale, travels to the appropriate metering station according to the recipe. With great precision, the ingredients are metered into the container and weighed. In addition, there is also the opportunity to add micro ingredients with an AZO COMPONENTER® scale. A special filling attachment, with a gate to protect against discharge of

any residue, ensures that the batch container is filled dust and contamination free. At the end of the weighing process, the batch container is picked up from the floor-mounted scale and moved into an intermediate storage area ready for the subsequent process. Corresponding bar-coded documentation ensures reliable batch tracking and identification of contents for the next process step.



Container feeding stations and operator-controlled manual additions



Collection with of batch containers



Travelling container scale

AZO DOSITAINER®

With built-in metering screw



Frictional wheel for metering screw

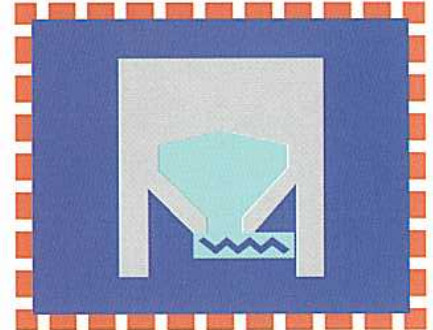
Operating principle

The AZO DOSITAINER® can be mounted on the container docking station and locked in place pneumatically. Identification errors are eliminated by an electronic ID sys-

tem. The patented docking sleeve ensures dust-free operation. The vibrating discharge device guarantees complete discharging and consistent filling of the metering screw, even on bulk ingredients with poor flow properties. The coarse to fine switching of the dosing screw enables precise metering into weighing systems, even for high throughputs. The stop valve at the screw outlet prevents dribble.

The advantages

- Easy-to-clean, rugged design
- Suitable for bulk materials with poor flow properties
- Enables accurate batch tracking
- AZO DOSITAINER®s can be changed without leaving residue,

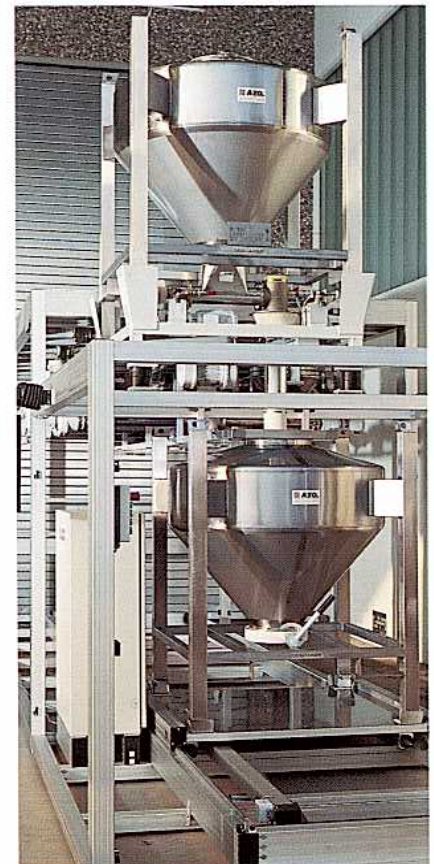


thus eliminating the need for intermediate cleaning of the metering screw.

- The integral dosing screw is a highly accurate metering device for downstream weighing systems.
- A very accurate feeder, even with high throughputs, due to the frequency controlled drive with coarse to fine metering and the quick acting pneumatic stop valve at the outlet of the metering screw.



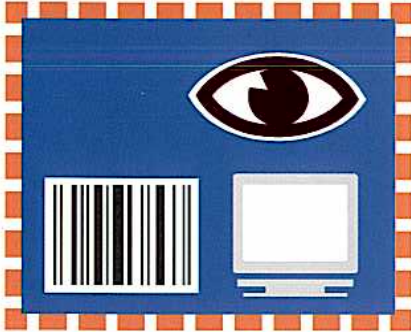
Feeding station for pneumatically filled AZO DOSITAINER®



AZO DOSITAINER® in use with AZO COMPONENTER®

AZO

Process control and graphic system

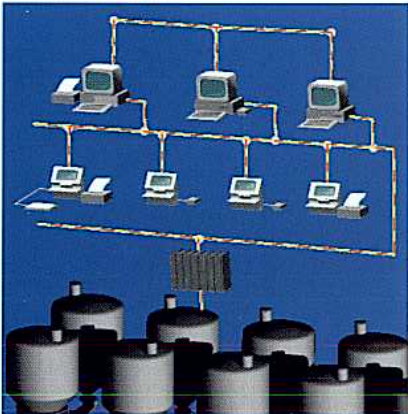


Modular control systems

The AZO process control and graphic system is used for the control and graphic display of the entire process. It monitors all operations such as storage, metering, weighing and collection.

The modules available

- Inventory management
- Ingredients management
- Recipes management
- Order management
- Further options upon request



Control concept for the future



Standard PC for control and graphic display of process



Control panel with color monitor



Central process control and graphic display system



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