

## Vacuum weighing systems and big bags in the filtration of beer

**Operator protection**

**Closed kieselguhr handling**

**Continuous high quality**

**Constant dosing**

**Less dust more hygiene**

### Customer

The automated supply of auxiliary agents for filtering in breweries is playing an increasingly important role. Due to the dust accumulation and the open handling when emptying sacks, a production area arises which does not meet modern technical standards with regard to hygiene, quality and workplace safety. With manual operation, there may always be

faults such as confusion of raw materials, faulty metering, wrong timing etc.

### THE SOLUTION

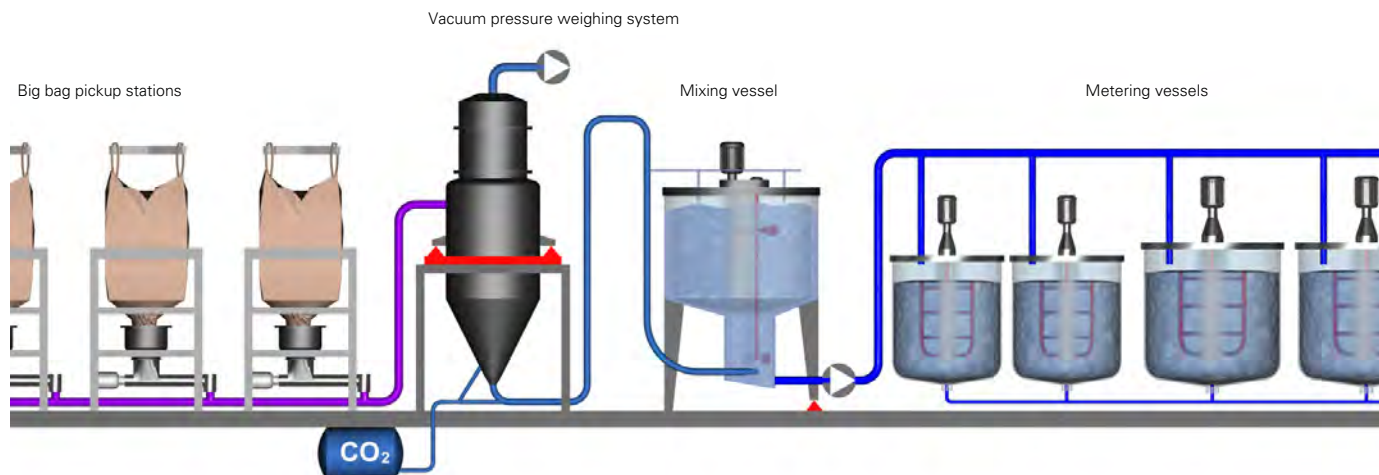


### Task

The job for this system was to provide dust-proof docking for coarse and fine kieselguhr as well as stabilizers, which are supplied in big-bags, and to transfer these materials automatically to the central mixing vessel via a vacuum pressure weighing system. The conditions for the design of this automated system were reduced space and a room

height of 4 m. The materials had to be transferred into the enclosed system by means of CO<sub>2</sub> without oxygen enrichment and then to a tank with degassed water.

## AZO solution



### Big bag pickup of kieselguhr and stabilizers

For low-dust pickup of the coarse and fine kieselguhr as well as the stabilizers, big bag pickup stations are used. The big bags are hoisted from the pallet and transferred via the integrated craneway to the respective big bag pickup station where they are deposited. A dust-tight connection between the big bag and the vacuum weighing system is then established by means of the newly developed big bag connection system. For this, the big bag opening is put over the interior pipe of the connection system and clamped firmly using a clamping lid. If the kieselguhr does not trickle down properly,

the big bags can be emptied completely by means of a flexing device.



Big bag connection system

### Feeding of the mixing and metering vessels

The material in the conveyor scale is pressurized with carbon dioxide gas and conveyed via the pressure system to the mixing vessel. Injection takes place below the water level; the conveying gas is separated via a secondary filter and returned to the circulation. The respective metering vessel is fed from the mixing vessel by pumps according to demand.



Mixing vessel

### Vacuum pressure weighing system for ingredients supply

According to the parameters of the formulation, the individual ingredients are transferred in the single-pipe system one after the other to the conveyor scale via vacuum conveying where they are weighed precisely. The exact quantities of coarse and fine kieselguhr are determined in the formulations. Further special ingredients can additionally be transferred to the conveyor scale. All metering and weighing operations are controlled by a process control and monitoring system. A detailed and traceable filtration documentation is prepared in the course of the automated feeding process.

Integration into existing control systems is possible.



Vacuum pressure weighing system

### Special advantages

- Enclosed system
- No binding of foreign smells
- No health hazard for the operating personnel
- Flexible reaction and adaptation to the filtration development
- Exactly weighed batches, therefore uniform quality of filtration
- Dust-free working environment
- No transportation space for the supply of filtering auxiliaries
- No bagged materials in the wet area
- Reproducible
- Documentary evidence