

How to quickly reload from big-bag to bulk

Value added logistics (VAL) is the creation of higher added value in the logistics chain. In addition to transport, many transport companies also offer repackaging of products. This is also the case in the bulk industry: dry bulk goods are often transported in bulk quantities. When these substances are processed, the products are subsequently repackaged, for example from big-bags to bulk.

Transport and delivery of raw materials happens more and more with the help of FIBCs (flexible intermediate bulk containers), also known as big-bags. For efficient discharging, TBMA offers sophisticated systems to optimally utilize the benefits of these bags.

DUST-FREE, EFFICIENT AND HYGIENIC

TBMA big-bag discharging systems are designed for trouble-free discharging of various products from different types of big-bags. Dust formation, product loss and contamination are thus prevented. Products can vary from free to poor-flowing. The systems are suitable for processing single or multi-trip bags, with or without a plastic inner liner.

Discharge usually takes place in, for example, a hopper, screw, loading chute, rotary valve and/or pneumatic conveying system. Sieves, filter units, weighing cells, etc. can be added optionally. For highly polluting products, such as carbon black or TiO₂, we offer a solution to adequately remove and dispose the inner liner to limit contamination of the environment to a minimum.



TBMA Twin-discharging big-bag discharging system with integrated dust filter system.

BIG-BAG TO BULK TRUCK

Dry bulk goods are often transported and stored in bulk quantities. Regularly, when these products are processed, they are subsequently repackaged, for example from big-bags to bulk. The value-added logistics industry plays an important part in this process. When transferring bulk goods from big-bags to bulk trucks, time is of essence; sometimes a limited free-of-charge time slot to load the truck is applicable. For loading bulk trucks, TBMA offers special, high-capacity and flexible big-bag discharging systems.

DISCHARGING SIPERNAT

Sipernat is a silica with a particularly high

absorption capacity that can be used as an anticaking aid. It enhances the flowability and prolongs the shelf life of powders or granulates which are liable to caking during storage and transport.

For the discharging of big-bags holding Sipernat, TBMA designed a twin-discharging system for emptying two big-bags at once. The bags are placed above the discharge hoppers with a fork-lift. These hoppers are equipped with a three-bladed knife to cut the big-bags. The product then drops into the discharge hoppers and into a single horizontal screw conveyor with opposite pitch, which serves both hoppers. This way, the product ends up in the middle, where it is transferred into an inclined screw conveyor, which transports the product upwards to a loading chute. When loading a bulk truck, the loading chute is connected to the truck's manhole, ensuring dust-free loading.

A centrally placed, integrated dust filter system filters any product dust that occurs in the discharge hoppers. The S-AX dust rotary valve below the filter system transports the product directly back into the screw conveyor. This way, no product is lost.

TiO₂ DISCHARGING INSTALLATION

Titanium dioxide (TiO₂) has been used for a century in a range of industrial and consumer products, including paints, coatings, adhesives, paper, plastics and rubber, printing inks, coated fabrics and textiles, as well as ceramics, floor coverings, roofing materials, cosmetics, toothpaste, soap and water treatment agents. For a leading producer of TiO₂,



The Moduflex loading chute ensures efficient and dust-free loading.

TBMA designed and supplied a custom-engineered big-bag discharging installation. Key words were high-capacity, ergonomic design, flexibility and minimal dust emission. Also, the system should be able to load two bulk trucks at once.

The TiO_2 is being produced in a variety of grades for different applications. Cross-contamination between these grades should be avoided at all times. To accomplish this, TBMA designed an installation with two discharging stations. These stations in turn are equipped with two discharge hoppers, so different grades of TiO_2 can be discharged without the need to clean the hopper in between. Each of these hoppers is equipped with a large control sieve and a Moduflex loading chute for a dust-free connection to the bulk truck. The central dust filter unit ensures a dust-free working environment.

The big-bags are placed at the pick-up point with a forklift. The integrated automatic hoisting device lifts and transports the big-bags to the discharge hoppers. Each discharging station has two hoists: when one big-bag is being emptied, the next one is being prepared at the pick-up point and without operator interference, automatically lifted and positioned above the discharge hopper.

Altogether, this clever design allows a continuous and quick big-bag discharging and very efficient filling: the system can fill a 23t truck within one hour. Due to the double-station execution, this means two trucks every hour. Talk about added value!



Continuous TiO_2 discharging to fill a 23t truck within one hour.

VALUE-ADDED LOGISTICS (VAL)

With more than half a century of experience, TBMA is an expert when it comes to loading and unloading systems for bulk trucks, silos, ships and stockpiling. The starting point here is always creating a

dust-free, safe and flexible solution for your production process.

The customer's ROI and business continuity as well as sustainability also play a significant role in the design of all TBMA systems.



Two discharging stations to avoid cross-contamination.