

Effective Powder and Granule Supply

New Vacuum Conveyors make material transfer and loading safe

VOLKMANN Inc.



Figure 1: Material flow of a Vacuum Conveyor: Container loading example



Figure 2: Two Vacuum Conveyors transfer different powders onto a powder processing/production line; for the conveying pipeline here hoses were chosen.

During the planning and improvement of filling and packaging lines, the question often arises as to how one can best optimize the material flow. Product flow downstream of the packaging unit is normally highly optimized; however, the supply side often shows weakness. In an effort to change this Volkmann GMBH has launched a new loading system, which combines the advanced Multijector®-Vacuum Conveyor (figure 1) with a level-controlled buffer hopper.

With this transfer unit, powders, granules and other bulk materials to be packed are first safely transported by vacuum and thereafter supplied to the packaging and filling process on demand. The result is an interactive, enclosed transfer system, which is also suitable for pellets, capsules or tablets. This new conveying method has considerable advantages over conventional, old-fashioned, mechanical transport technologies, e.g. gentle product movement, blockage prevention and product flow-rates up to 100x larger than air-flow rates. Apart from supplying packaging lines, Volkmann Conveyors can safely load mixers, tablet-presses and many other types of process equipment and vessels (containers, silos, etc.) (figure 2).

Conveyable bulk materials can also include difficult and sensitive powders. The cyclic vacuum-plug-flow conveying operation minimizes product separation or segregation, contrary to many popular misconceptions, and when introducing small amounts of powder additives into the system. This can be via manual suction wands or conventional feeding hoppers. For larger quantity operations, bag rip & tip stations or super sack unloading devices are more common.

ATEX explosion proof certificates for all Multijector®-Vacuum Conveyors make them a perfect choice for use in potential EX areas (powders and gases), a feature unique to the Volkmann system.

If pipe diverter valves are integrated in the conveying line, the powders can be collected from a single storage silo and transferred to several filling machines. In addition, raw materials can be fed into the vacuum transfer system from various locations and afterwards load one central mixer. An infinite variety of system combinations are possible. The system's record of successfully conveyed materials ranges from Activated Carbon to Zeolithe and is available on request.

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