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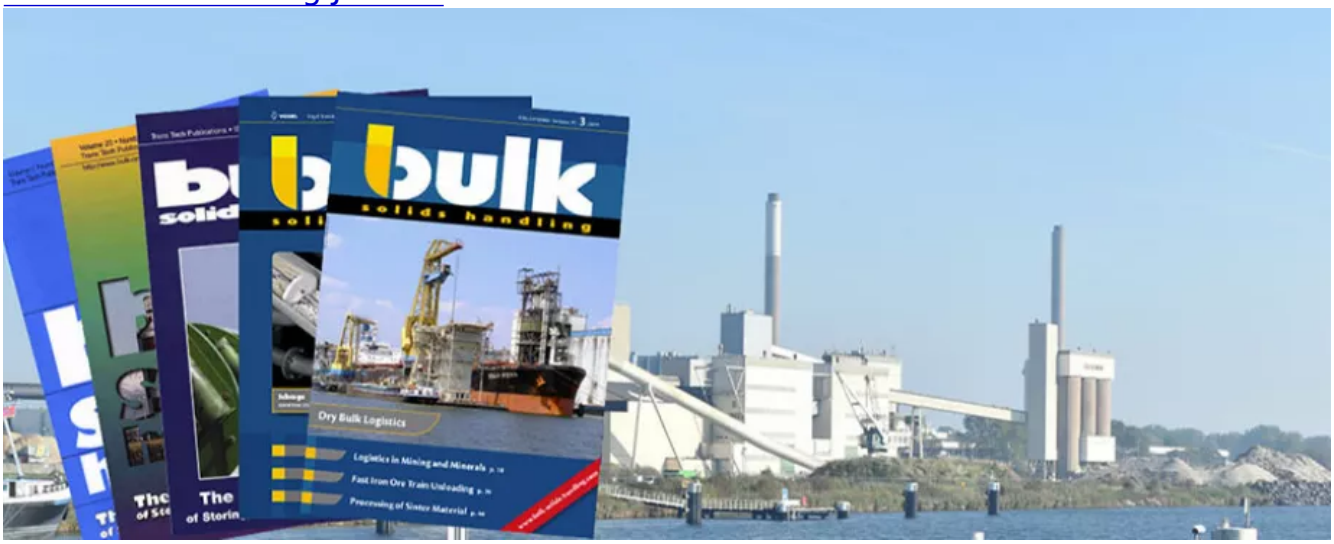

White Paper

Recent Advances in Sack-Emptying Technology

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Sacks are widely used as a method of storing powdered, granular and fibrous materials. The major drawback associated with this method of storage is discharging material from the sack in a clean and efficient manner. This paper traces the design and development of a Fully Automatic Sack Emptying Machine. The design criteria and considerations are outlined from the initial concept stage through to the production of a highly efficient and versatile machine.

There are three methods generally used for the storage and transportation of powdered, granular and fibrous materials, these being:

1. Bulk tankers plus silos.
2. Intermediate bulk containers.
3. Sacks.

Of the three methods, sacks are by far the most versatile, because of the availability of supply, ease of handling and initial plant costs. Even so, there is one major drawback to handling materials in sacked form – the emptying of the product from the sack in a clean and efficient manner, whilst keeping labour requirements to the minimum.

Many sack emptying machines have been produced over the years ranging from high-speed, fully automatics to low speed and throughput semiautomatics. Each

machine type is capable of handling certain products and sack types but none have been able to overcome all the problems of sack emptying with its wide range of sack/product combinations. The market has long required the simple, compact machine which will provide all these requirements.

In setting out to design a machine to fulfill these requirements, JSK (Materials Handling) Ltd. analyzed all the problems of emptying the various sack/product combinations as well as the requirements of the many industries handling products in sacks.