

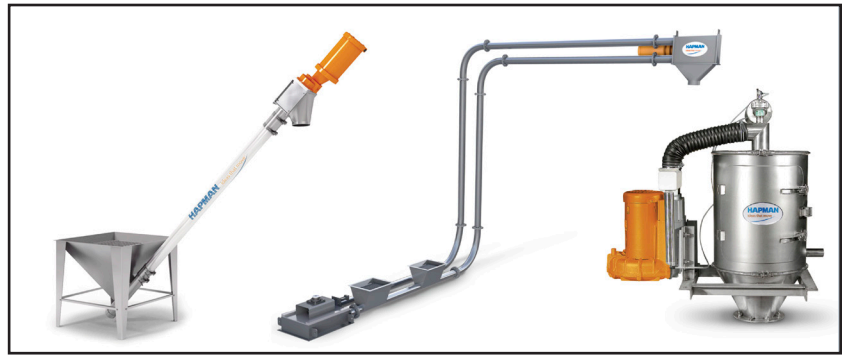
TECH BRIEF

Conveyor Selection

The 6 Key Considerations for Selecting the Right Conveyor System

Selecting a conveyor system for a batch or continuous processing application is not always as straightforward as you may think. In fact, it almost never is. Moving material consistently – at a rate that is in line with production requirements and in a manner that does not contribute negatively to the plant operating environment, such as dusting or increased maintenance – can be a challenging endeavor for process engineers and procurement personnel.

The most effective way to evaluate all of the greatest options for batch or continuous processing is to consider each material movement requirement from a blank starting point. Looking at an application with the mindset of “what is the best way to satisfy our material conveying need” puts the processors in a better position to make the right equipment selection prior to purchasing.



Hapman offers three styles of conveyors. Flexible Screw (left), Tubular Drag (center), and Vacuum (right).

Key considerations:

1. **Operation** - Fundamentally, moving material falls into two main categories, and it is important to understand the difference to ensure the correct conveyor selection. One is conveying, which is simply moving material or materials from one or more pick-up points and delivering them to one or more drop points. The other is feeding, which generally is much more time-sensitive and process-critical in terms of the amount of material delivered.

Defining the operation of a feeder consists of determining whether the feeder will be required to deliver in discrete batches or deliver on a non-stop, rate-controlled basis. If batching, it is important to know the amount that must be delivered, the time in which it must be delivered, and what level of accuracy will suffice. It is also important to know the idle or at-rest time of the feeder between batches. If feeding continuously, the rate needs to be defined, as well as the accuracy.

2. **Material** - There are several important characteristics that make up the complete material definition.

Each should be understood in their entirety, such as flowability, abrasiveness, temperature and moisture content. Some of these are dynamic and can influence – or can be influenced by – one or more of the other characteristics, so it is always best to analyze all of them together.

3. **Environment** - There are a number of environmental factors that you must consider in the proper selection of equipment. Some of these may combine with material characteristics to cause or exacerbate handling concerns, while different factors may necessitate added health and safety countermeasures. These include open sources of ignition, the potential for fire or explosion, and the presence of corrosive vapor.

4. **Footprint** - The decision between each conveyor system and another often comes down to how much room is available to install the equipment. When considering new, or even used, equipment, particularly when some portions of the system already exist, always be sure to consider things like inlet and discharge elevation, as well as how much width, depth and ceiling height is available to accommodate the conveyor systems.

5. **Cost** - There is no denying the role cost plays in every project. Understandably, the justification formula is different from each business to the next. Some companies prioritize the long-term cost of ownership in their justification calculation – focusing more on reliability, reduced energy consumption and maintenance – while different companies focus more on the initial investment. It's always ideal to discuss all expenses, both long-term and initial, as soon as possible to determine the financial feasibility of a proposed conveying solution.

6. **History** - When replacing existing equipment, the importance of service history cannot be overemphasized. Where reliability has been an issue, understanding the difficulties can provide important clues that lead to suitable countermeasures. Simply changing brand names is no guarantee that you will end up with a more reliable, longer-lasting piece of equipment. It is far better to provide details about service history in order to understand how any proposed conveying solution will provide a more satisfactory result.

The collaborative aspect of the belt conveyor selection procedure is what sets us apart from our competitors. The dialog we have with our customers is the foundation for both an ideal material handling solution and a true business partnership.

ABOUT HAPMAN

For 70 years, Hapman has provided manufacturing plants around the world with the most technologically advanced powder and bulk handling equipment and systems, offering custom engineered equipment and systems for chemical, food, pharmaceutical, plastics, building, minerals, and other industries.

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