BEST PRACTICES IN MATERIAL HANDLING IN THE E-COMMERCE BOOM

The e-commerce boom has created challenges and opportunities for the companies who must distribute products for both in-store and online efforts. Online shopping has changed the industry, but in-store sales are still an important piece of the puzzle for many retailers, and it's important to these customers to have a solution that provides both.

Working in the field on solutions for both large and small distribution centers, Hytrol solutions providers have created a set of best practices for these solutions. In transportation, accumulation, combining, merging, scanning, and sorting, these best practices allow distribution and fulfillment operations to run smoothly.

Transportation

Transporting items from Point A to Point B is a primary function of any conveyor. Transport conveyors for parcel handling are specifically designed to smoothly carry a variety of product where customers need it to go.

The first rule of material handling is to always consider the product. If conveying both cartons and poly-bags, a slider bed may be the best option. Monitor the variances in the shapes, sizes, weights and weight distribution of the product being conveyed, and build the solution around the most irregular. Roller conveyor can be utilized for many products, but for any items which can't be conveyed on them, avoid jams and downtime by utilizing a belt solution.

In addition, check for irregular products that may physically react with the solution being considered. For instance, if shipping magnets, metal conveying equipment is not ideal.
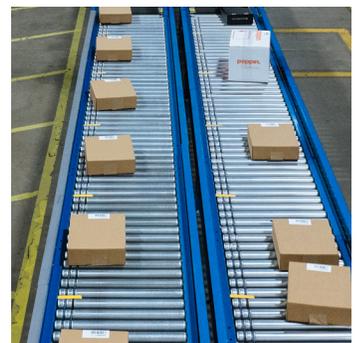
To keep product running smoothly on the solution, eliminate any catch points, and focus on guarding. Irregular products are prone to catching on these points or getting caught in gaps. Take even the smallest openings off of the table to ensure product doesn't snag or catch during transport.

In addition, create smooth transitions from conveyor to conveyor. Consider placing the start of the connecting conveyor slightly below the outfeed of the first so that product won't be caught in the gaps between conveyors.

Hytrol's Model BPC and Model HSS are both bolted slider beds designed for the parcel industry, and can be used to transport both irregularly shaped items and cartons.

Accumulation

During accumulation, products are combined from different areas of the solution and prepared for sortation. This also serves as a buffer between operations. If needing to change carriers or transport containers, accumulating product allows the operation to continue with minimum lost throughput.

Many of the same rules that apply to transport apply to accumulation. Again, creating smooth transitions from conveyor to conveyor is imperative. Consider the product and ensure that the system able to convey even the most irregular of packaging. For any items that won't convey or accumulate properly on rollers, utilize a roller belt solution. Hytrol's RBE24EZ is a full-width roller belt conveyor that uses 24-volt technology in the accumulation of small items, like letters and poly-bags. With conveying speeds of 31-150 FPM, it creates optimal throughput. The related RBIE24EZ is an inclined version of the same product.

In addition to following the same guidelines as with transport conveyor, accumulation equipment must be able to accurately sense the product, taking into account the shape and height accurately. The logic used must be able to determine false signals and match speeds to account for any incorrect spacing of product. The Pivot™ Warehouse Control System synchronizes the systems of multi-channel distribution operations and serves as a link between employees, conveyor and automation.

Combining and merging

Rates required by e-commerce companies are so demanding that gaps pulled between products must be held to a minimum. That is important to consider when combining and merging product lines, and brings us to two necessary elements of this area. To continue to control the product being conveyed while maintaining high levels of throughput, minimal space must be used between products.

As with this **third-party logistics company**, Hytrol's proprietary solution, Gap and Store, allows a large amount of product to merge while maintaining consistent volume and a high rate. The Gap and Store method is used to feed a high-speed merge with pre-gapped slugs of cartons. Pre-gapped slugs are built at a lower speed and are then released to the merge at a higher speed. Gap and Store allows for pre-gapped slugs of cartons flowing onto the merge belts and maximizing the amount of cartons that flow through the system.
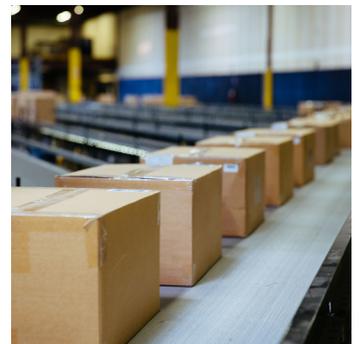
Sortation

Sliding shoe sorters are an industry standard in parcel sortation. Best practices indicate a shorter pitch on slats. This allows for more throughput, so companies can have flexibility of product sizes and throughput, sort products as small as business cards along with poly bags and a wide range of cartons, and sort up to 200 cartons per minute.

A dual-sided solution also allows businesses to maximize space. When considering the locations a distribution center must ship to, a dual-sided solution may be the most efficient way to sort product to more locations—with the possibility of shipping to up to twice as many destinations in the same space.

The shorter pitch and dual-sided solution are features of Hytrol's ProSort 100 Elite. The shorter pitch on the ProSort 100 Elite shoes maximizes the number of products that can be sorted and reduces the required minimum spacing between those products. The dual-sided option allows for potentially doubling the number of diverts without having to extend the length of the sorter. A dual-sided sorter also allows for different shipping methods such as fluid-loading trailers on one side while diverting flats or poly bags to gaylords on the other side.

Businesses of today often don't have the luxury of choosing between e-commerce fulfillment and a retail store operation. To do both, you must choose a solution that can handle both. Talk to us about how we can help your solution.