



Sortation Levels & Types of Sorters

*Which One Is
Right for You?*



Amazon had over 560 million items of inventory in its warehouses in January 2018, ranging in size from a 1.5-ton belt sander to a tie pin. That's a lot of different sized products to be conveyed, sorted and shipped. While your organization may not be in the same league as Amazon, you may have a need to sort products as they move through your operations.

Sortation systems are pivotal to the order fulfillment process in your facility. Not only do they increase efficiency in operations to meet shipping targets, they can also reduce the amount of manual labour needed to process your orders. Efficient sortation systems also increase throughput and lower your overall operating costs.



There are a wide variety of sortation systems available, from simple pushers to sophisticated cross-belt sorters. Choosing the sorter that is right for the job depends on numerous factors, including the cost of the equipment, the speed at which the product is being handled and the physical attributes of the product being handled, such as size, weight and fragility.

So, which sortation solution is right for you?

Here is an overview of various types of sorters available for different types of applications:



Slow-Speed Sortation – *10 to 20 cartons per minute.*

Slow-speed sortation systems are for low volume throughput situations and can be used in conjunction with roller and belt conveyors. They are the most economical of the sortation solutions. Variations include:

Right-Angle Pushers

A right-angle pusher is mounted on the side of a roller or belt conveyor at a 90° angle to the point where the product is to be diverted. When the product is in position, the pusher extends and transfers the item across the conveyor at a right angle. In this style of transfer, the product orientation is changed.

Right-Angle Transfers

A right-angled transfer utilises a set of powered transfer bands between the carrying rollers that are pneumatically lifted under the product to be diverted off the main conveyor. Once the transfer off the main conveyor has been completed, the bands are lowered and normal conveying on the main line is continued. Once again, product orientation is changed during the transfer.



Medium-Speed

Sortation – 20 to 80

Carton per Minute.

For moderate speed sorting situations, there are a number of sortation options available. The most popular ones are:

Multi-Belt Sorter

Multi-belt sorters transport product over the surface of multiple narrow belts instead of one wide belt. A set of pneumatically lifted, powered wheels at either 30 degrees or 45 degrees to the direction of travel are raised as the product to be transferred is conveyed over them, thereby powering the product off the main line in a smooth, continuous transfer. In this style of divert, the product orientation is maintained.

Pop-Up Sorter

Pop-up sorters use a similar style of pop-up divert as described above, however the main sortation conveyor is a full width belt conveyor and the main conveying belt is “snubbed” down below the divert module. Once again, product orientation is maintained.



High-Speed Sortation – 80+ Cartons per Minute.

High speed sorters are technically more advanced and come with features that allow higher speed sortation to occur. Popular models include:

Sliding Shoe

A sliding shoe sorter uses, as the name implies, a “shoe” that slides across a custom designed slat that is used as the conveying surface. Shoe sorters can incorporate dynamic gapping at their inducts to minimize the gap created between consecutive products, thereby maximizing your sortation rate. It is not uncommon for these sorters to run at speeds of 500fpm+ and sort rates in excess of 150cpm.

Tilt Tray

A tilt tray sorter is a recirculating loop style conveyor equipped with trays at predetermined centers. An individual item is fed onto an individual tray as it arrives at the induct. When the item reaches its sortation destination, the tray is tipped and the product is released onto a takeaway chute or conveyor.



Cross-Belt

A cross-belt sorter works the same as a tilt tray sorter, except the trays are replaced with Individually driven conveyor belts. When the product reaches its sortation destination the belt conveyor is started so that the item is discharged into a chute or onto a takeaway conveyor.

There are multiple types of sortation systems designed for various applications. Based on the type of product being moved and the speed required, it can be a difficult task to choose the one that is right for the job. Mainway Handling Systems can custom design and build a sortation system that's exactly right for your sortation needs. Our solutions integrate “best of breed” equipment and technologies from our partners from across North America and around the world.

Call us today and we'll get you sorted.

Source:

1. ScapeHero, How Many Products Does Amazon Sell? – January 2018
<https://www.scrapehero.com/many-products-amazon-sell-january-2018/>



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Our Vision Drives Innovation

Since 1988, Mainway has been providing clients with an unprecedented standard of excellence in conveyor design, material handling and systems integration. Our experienced team delivers leading-edge customizable solutions, embracing technology advancements to produce exceptional end results.

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