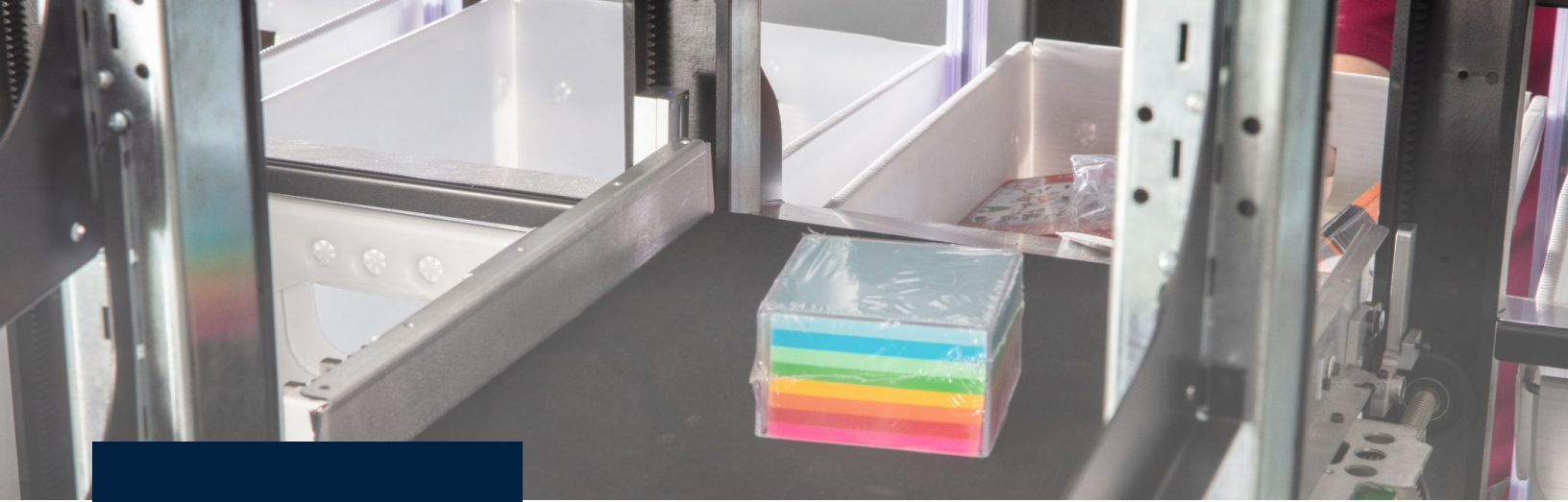# Increasing Distribution Center Productivity Using Automated Put Walls

SURE SORT™ APPLICATIONS

OPEX® | **Sure Sort**™

Executive Summary

The introduction of the Sure Sort™ small item sorting system revolutionized order fulfillment in eCommerce Distribution Centers. Sure Sort has spurred tremendous interest from end-users wanting to understand how and where this unique system could be applied to their operations.

The purpose of this white paper is to answer the most frequently asked questions about Sure Sort and provide a high-level explanation of its most common applications.

The Sorting Challenge for Businesses

For many retailing organizations, effective supply chain management impacts cost, service level, and quality. Distribution centers are evolving to meet consumer expectations for fast shipping and delivery. Sorting is one of the more labor-intensive and expensive processes involved in filling an order.
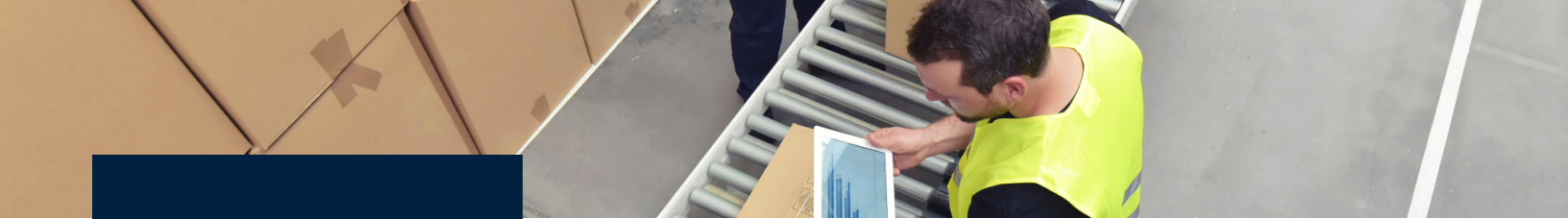
What is Sure Sort?

Sure Sort is a highly scalable, configurable, and dense small item sorting system. Designed and manufactured by OPEX®, Sure Sort robotic item sorter easily directs a wide range of items – from cylindrical items to clear items and plastic bagged and blister pack items – to their final or intermittent order grouping in a single pass.

Sure Sort's compact array of sort locations can be scaled, sized, and customized within a small footprint. It is a cost-effective and efficient solution for items or packages under 5 pounds and within Sure Sort's dimension specifications – 2.00 inches in length and width (minimum), and 15 inches in length (maximum), 12 inches in width and 4 inches in height (maximum).

Oversized items can be manually processed into Sure Sort order totes. Manual processing may be appropriate where an object is too large to be handled by the Sure Sort. For example, objects which are too long or too high to be transferred by Sure Sort's delivery technology – the iBOT® robot– may be manually scanned and the target "sort-to" destination can then be identified by the warehouse management system (WMS). If instructed by the WMS, the Sure Sort will illuminate a set of indicator lights to identify the container (e.g., a bin or box) into which oversized items should be manually placed. You may wish to further modify your WMS to instruct the Sure Sort to utilize the lights for other purposes such as, for example, to identify specific groups of bins or boxes which need to be prioritized for placement on a specific delivery truck about to leave your facility.

Sure Sort

Sure Sort is ideal for small businesses looking for a cost-effective entry into warehouse automation as well as large fulfillment operations looking to streamline their processes.

By avoiding the number of touches, transfers, and conveyance complexity associated with existing sorters, Sure Sort provides a cost-effective way to sort items more accurately and efficiently. Sure Sort reads barcodes on any side of items placed in its scan tunnel. Bar code information is sent from Sure Sort to a WMS. The WMS associates each item scanned with one of Sure Sort's destinations, and sends this information to Sure Sort's controller. A waiting iBOT receives the item and the controller dispatches the iBOT to the proper destination.

Sure Sort robotic sorting system operates on proven iBOT delivery technology. This is the same technology that drives the OPEX Mail Matrix®, a specialized mail sorter, and the OPEX Perfect Pick®, a goods-to-person order picking system. Designed with ergonomics in mind, Sure Sort is ideal for small businesses looking for an affordable entry into warehouse automation as well as large fulfillment operations looking to streamline their processes.

Installing quickly and easily, Sure Sort is highly scalable in both size and throughput. Expansion modules and iBOTs can be easily added to the system to adjust to growth and peaks in demand.

Here are some of the more popular use cases for Sure Sort:

Order Fulfillment

A business that traditionally employs batch or wave picking delivers items to a designated sort area. A sorting process divides the items into individual orders to be sent to the pack and ship area. Order sortation is a labor-intensive process when done by hand or using a traditional put wall. The space requirement to use conventional sorter technology can be quite large and the range of items that can be handled efficiently can be significantly limited.

Sure Sort uses robotic vehicles to increase efficiency, accuracy, and speed of order processing at the sort area. Sure Sort sorts items at rates up to 2,400 items per hour. Sure Sort stores bins in a vertical matrix to provide the maximum number of sort locations in the most limited space.

Sorting is a major expense for any warehousing/shipping operation. A majority of today's warehouse and distribution operations employ manual techniques using "assisted technologies" such as hand-held scanners and put-to-light systems. Others use conveyance systems at varying levels of sophistication and complexity.

In most organizations, the order fulfillment process begins when a wave is released from the WMS and picker is given a list of items to collect from storage aisles within the warehouse. The picker collects the items manually in "batches" containing multiple items for multiple orders to maximize use of the picker's time. Once picked for orders, these items are brought back to a central location where the items for each order are consolidated, packaged, and shipped

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The problem is, the order consolidation process at the packaging and shipping line is very labor intensive, inaccurate, and time consuming. This is where Sure Sort can provide an impact. Throughput rate for traditional put walls averages anywhere from 200 to 500 items per operator per hour. Sure Sort can process up to 2,400 items per hour with three operators: one at the induction belt and two removing orders from trays.

The industry applications of Sure Sort are virtually unlimited.

Below is a representative list of successful applications of the technology to order fulfillment processes.

E-Commerce – Sortation of retail items for retail consumers.

Figure 1: Online Retail/B2C

Figure 1: Batch picked orders are consolidated for shipping using Sure Sort in the diagram above.

Retail Store Distribution/Brick and Mortar – Efficient sortation and collection of orders to be distributed to retail stores, or even other DCs within your supply chain network.

Figure 2: Brick and Mortar Retail/B2C

Figure 2: Items for shipment to stores and DCs are sorted into orders using Sure Sort in the above diagram.

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Parcel Sortation/Presort – Presorting by zip code or mail zone, reducing shipping charges since shippers will not need to presort their items.
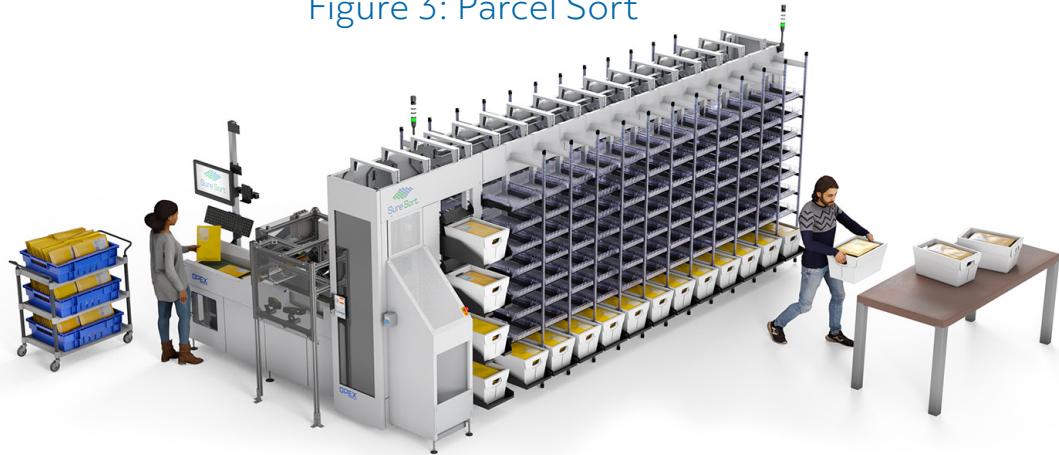

Figure 3: Parcel Sort

Figure 3: Small parcels can be sorted to the zip code level for shipping efficiency and to reduce costs.

Kitting – Sure Sort can speed the process of pairing like items into multiple kits, "item of the month" clubs or meal delivery clubs, for example. Individual items can be inducted into Sure Sort and delivered quickly to order trays until all kits are filled with the desired items for that day's shipment.

Figure 4: Kitting

Figure 4: Individual pieces can be sorted into orders. In the diagram above, products are being sorted into orders, but kitting could include fulfillment of subscription box orders, or maintenance kits for field service personnel, for example.

In the above example, a sequence of containers, each containing a single item (e.g., body lotion, hand sanitizer, perfume, shampoo and conditioner) are received and their contents transferred to the conveyor.

Each container may have a unique bar code or other identifier such that only a single scan of the container itself is required to make the sorting decision for each item in the container.

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Alternatively, the items may arrive at the workstation in a stream and scanned individually. When the last item to be sorted has been removed from the container, the next container is scanned. The process is repeated until kits comprising the proper quantity of each item have been assembled.

Work In Process (WIP) – Companies which provide customizing services struggle with how to consolidate multiple customized items per order due to the variation of time/days needed for each customization process. Sure Sort can provide an accurate order collection point as each item customization is completed.

Last Mile Delivery – The challenge for retailers wishing to capitalize on last mile delivery strategies is economically and quickly sorting a wide range of different type and size small parcels to the ZIP code level. Conventional sorting systems are too large and expensive to meet these requirements.

Ancillary Operations

In addition to order fulfillment processes, the Sure Sort can be used for such applications as:

Return Center Processing / Replenishment – Returns processing involves sorting a mix of many different items according to disposition. Within the sorting process, items must be assessed, accounts credited, and return-to-vendor tracking created. The combination of a complex reverse logistics process and the relatively low priority given to returned merchandise, in contrast to that which is being delivered to the customer, makes returns a difficult challenge for many fulfillment operations. Sure Sort removes some of the complexity and labor out of the process. Barcoded items scan to locations according to their disposition.

Cross-Docking – Some warehouses employ this strategy to speed the delivery of product to its end point. Sure Sort can be used in cross docking processes to sort materials to their end-point destination in the fastest time possible.

Retail Cross-Docking/Sort to Aisle – The Sure Sort is ideally suited to this type of application where space is at a premium, because in a first pass a single machine can sort inbound items down to the retail store level and, in a second pass, that same machine or an additional Sure Sort can sort those items down to the store aisle level. Products arrive to retail store locations ready for fast aisle restocking which maximizes in-store employee productivity and improves overall customer experience.