Achieve 4,200 Orders/Hour using Zero Picking Labor



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Inventories are not of equal value

Understanding how different classes of inventory move through the order picking/order fulfillment process is critical to designing a system that is accurate and efficient while meeting business plan objectives.

The classes or strata of inventory are usually designated A, B and C, generally signifying fast, medium and slow movers. Those Stock Keeping Units (SKUs) classified as A, or fast, movers most often conform to Pareto's 80/20 rule that 20% of the items account for 80% of the orders.

There is a sub-order of A class SKUs, we'll call them Super A SKUs, that almost literally fly out of storage. These Super A SKUs might represent a small percentage of your total inventory, but because they consume a large percentage of labor resources, they represent a challenge to efficient order fulfillment.



What is the most efficient and economical way of handling these Super A SKUs? Before looking at that, it's necessary to fully understand the anatomy of these SKUs.

Super A SKUs have three characteristics in common: high velocity, size and quantity.

• **High Velocity.** What constitutes a fast moving SKU varies, but Super A SKUs usually fall into the range of a few thousand picks per day consuming from one third to two thirds of picking labor resources.

• **Size.** There is a certain size and weight range as well. Items that are smaller than 8" x 8" x 3" and weigh under a pound can provide issues when being picked by manual or automated systems.

• **Quantity.** As few as nine SKUs, or as many as hundreds can make up the Super A inventory sub-group and consume a disproportionate amount of a facility's resources.

Velocity, size and quantity of SKUs combine to create a unique order picking challenge. Few material handling solutions offer the speed, accuracy, flexibility, scale, and cost effectiveness to handle these hot movers.

The A-Frame and mobile A-Frame, however, are designed to solve these problems, plus they are easily integrated into virtually all types of facilities. They control the Super A's and turn them into "completed orders" with a fraction of the resources other order picking technologies require for these unique fast moving SKUs.

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A-Frame dispensing systems, like SI Systems' Dispen-SI-matic® consists of two rows of dispensing channels arranged as an "A" that straddles a conveyor. The Mobile-Matic™ portable A-Frame is similar, but uses only one side to assure easy mobility. Both utilize all-steel dispensers that are microprocessor controlled for accurate timing of product release. Belt speed and timing can be customized for fast travel to the product, slower dispense speed and gentler product handling. A wide range of dispenser types are available to meet specific product shape and size characteristics.



The A-Frame family uses zero picking labor. Items are dispensed or placed automatically into totes, cartons or belt positions at a rate of up to 4,200 orders or totes per hour. The only labor required is replenishing the unit. Each pick required for its associated order is verified to assure accurate dispensing. This extremely accurate system often eliminates the need for order checkers, thus reducing labor and time requirements even further. Depending on the size and scale of operations, an A-Frame system can reduce order picking and order checking labor costs by 85% or more.

The capacity of an A-Frame system can range from 16 SKUs in a mobile unit to hundreds or thousands in a full A-Frame system. The mobile system comes pre-assembled and literally is delivered plug-and-play ready.

FEATURES TO LOOK FOR IN A-FRAME DESIGN

A-Frame dispensing systems, by the nature of their design and end-use application, are of rugged and simple construction. The only moving parts are the dispensers, which can be quickly changed.

There are, however, some key features to understand to improve your A-Frame knowledge.

The A-Frame family uses zero picking labor. Items are dispensed or placed automatically into totes conveyor, tilt tray or cross belt

Throughput. The high velocity characteristic of Super A SKUs requires a system that is capable of extremely high throughput. A-Frame dispensing systems are generally available in three configurations, Pick-to-Belt, Pick-to-Container and Pick-to-Tote.

In applications that require extremely high throughput, the Pick-to-Tote and Pick-to-Container configurations are usually chosen since it can provide throughput rates of up to 4,200 orders per hour. The number of lines and pieces per order is generally irrelevant. Whether the application is for e-commerce with one to three lines per order or store orders with hundreds of lines per order, the system automatically dispenses sufficient quantities to fulfill large orders and can adjust the conveyor speed to accommodate each specific order for rapid fast order fulfillment if necessary.

Pick-to-Tote and Pick-to-Container applications not only provide higher throughput rates, it often saves costs by eliminating consolidation, inventory transferring labor or equipment and order checkers. Pick-to-Tote can also be configured as Pick-to-Container where items are dispensed directly into shipping containers. This also helps reduce downstream order handling costs.

Order Contamination. High throughput can create other issues if the speed of the dispensing process is not controlled. A variable speed conveyor and is a must-have feature. It can be set to adjust the belt and tote speed based on each specific order profile; slower to accommodate larger numbers of items from one dispenser and faster to receive small quantities from a number of dispensers. In addition, each dispenser can be set for specific picking speeds, depending on the item. Thus, it is possible to pick fragile products gently, while still picking "normal" products at high dispenser speeds to meet throughput requirements, with no damage to fragile items.

Accuracy. Order picking accuracy is of paramount importance, not only for customer satisfaction, but also because high accuracy performance reduces labor costs associated with product checking, repicks and returns. A-Frame dispensing systems use sensors to verify that each dispenser unit fires and that the product is successfully dispensed. Look for systems with microprocessor controlled multiple sensors in each dispenser. In these systems, it is possible to achieve accuracies of 99.95%. For the rare anomaly, problems are logged, and the order is flagged and routed off line for manual intervention. A report is printed to locate and direct the correction with little loss in throughput.

The dense configuration of the channels, together with the unique "compound angle" arrangement, provides efficient utilization with no wasted space

Capacity. Super A SKUs usually fall into the size range of being too small to be big and too big to be small. Super A SKUs tend to vary in size as well. A-Frame systems can handle a fairly wide range of item sizes in standard dispensers. Dual width or long dispensers are also available as options. A well-designed A-Frame system has easily adjustable channel widths.



High Replenishment Rates. Easy replenishment is a major feature of A-Frame systems. Rates of more than 1,500 pieces per man-hour can be achieved with no training or special skills required. Automated replenishment devices can handle up to 3,000 pieces/hour. Replenishment can be performed while the A-frame is picking, without interruption. For advanced replenishment operations, look for systems that offer voice or RF directed replenishment tools to direct the replenishment of only the items required to fill downloaded orders.

Efficient Space Utilization. The Pick-to-Tote configuration provides great flexibility in designing the system since this configuration does not require routing conveyors or transfer stations. Any number of frames can be arranged end-to-end, or at right angles, to provide the desired overall capacity. The dense configuration of the channels, together with the unique "compound angle" arrangement, provides efficient utilization with no wasted space. To meet seasonal or promotional order requirements, a mobile A-Frame can be set up in very little space and adjacent to existing conveyor.

If your Super A SKU profile is light, small and moves thousands of items per day in consumer, store or kitting applications, you will not find a more efficient or cost effective solution.

About SI Systems

SI Systems leverages its decades of experience as an industry leader in providing hardware, software and unique engineered solutions that allow our customers to reduce labor, inventory and operation costs while increasing throughput, accuracy and inventory turns.

A-Frame Systems that can provide up to 4,200 orders per hour without any order picking labor can help most operations dramatically reduce labor, increase accuracy levels and extend order cut-off times.

Towline, AGV/AGC conveyance systems provide cost effective and reliable product conveyance in assembly, warehouse, distribution, manufacturing and institutions. SI Systems provides a full range of products and services including Rejuvenate & Retrofit (R&R) program for older systems.

The VWare WES, WMS and WCS software suite allows organizations to use their current methodologies and processes. Rather than reinventing and retraining their operations, organizations can reap the benefits of this powerful software quickly.

Unique VWare Features & Benefits:

- 100% true-versioned supportable platform
- Future upgrade and backwards compatible
- Uses existing processes and methodologies
- Wave and dynamic wave picking
- Modular and flexible architecture

The days of operations being considered "overhead" are dead! Let SI Systems show you how to turn your operations into a profit center. Call us at 800-523-9464, email us at info@sihs.com, or visit our website at www.sihs.com



Still not sure if your profile fits or looking for other answers? SI Systems engineers can help you understand your Super A SKUs. We'll prepare a report that will select the correct SKUs for an A-Frame system, locate each one for easier replenishment and high throughput, and recommend multiple channels for the same SKU if necessary.

A-Frames have proven their worth in a wide range of applications by saving time, reducing costs and improving order picking accuracy. These reliable systems require very little maintenance and can be customized to handle changing SKU profiles. See how an A-Frame dispensing system can help you tame your Super A SKUs.