BERKSHIRE GREY AMPLIFICATION
Supercharging your ASRS

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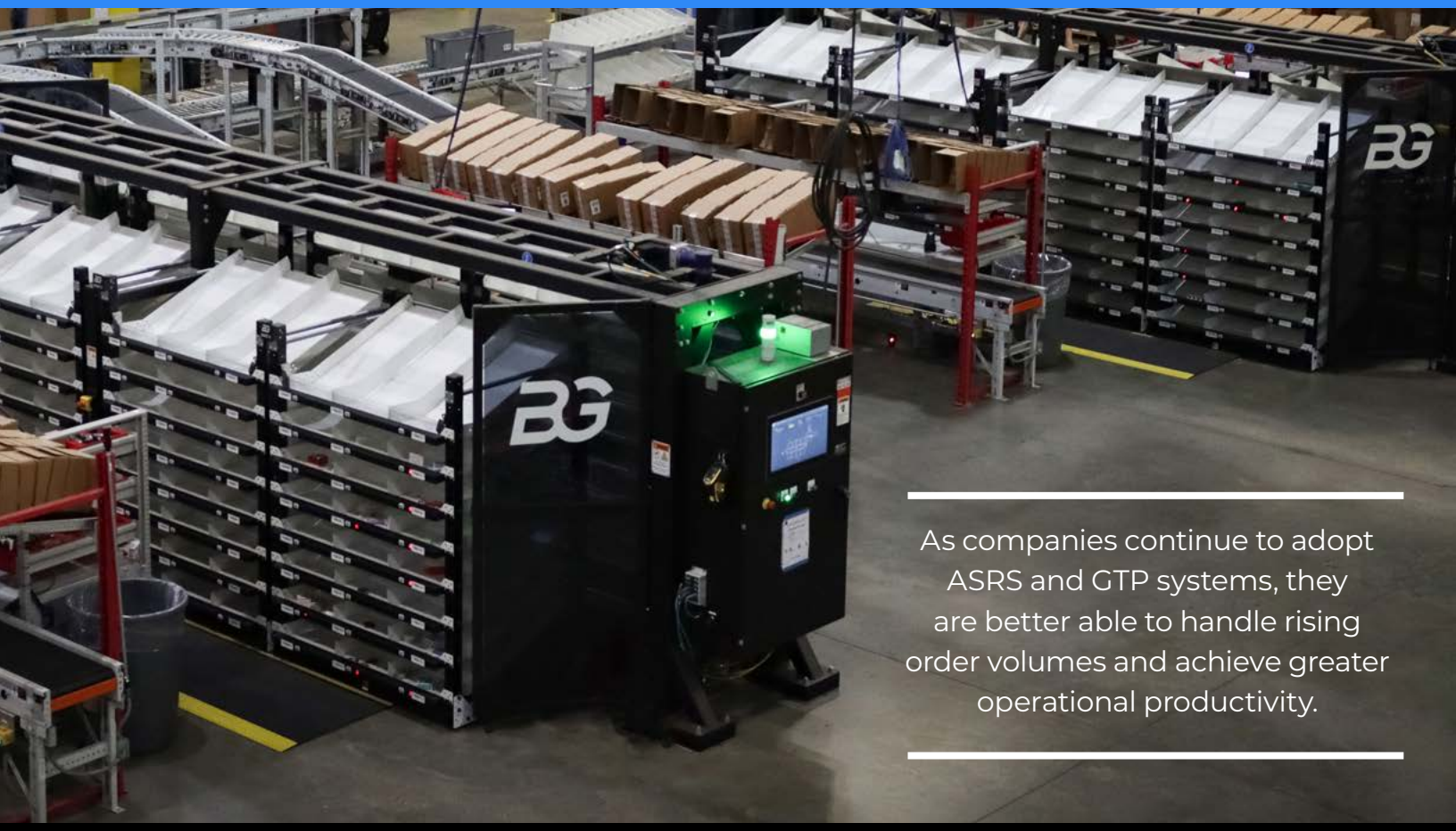
Introduction

As warehouses evolve to keep up with rising customer expectations, advanced automation solutions like Automated Storage and Retrieval Systems (ASRS) and Goods-to-Person (GTP) are enabling faster, more efficient operations. This technology has become integral to the efficiency of contemporary warehouses, transforming picking processes and substantially enhancing productivity.

With the explosive growth of eCommerce and the increasing need for store replenishment, traditional automation systems are being pushed to their limits. Demands for faster, more customized order fulfillment have introduced complexities in order profiles, such as diverse tote presentations, which are stretching ASRS and GTP systems to capacity. These pressures often create bottlenecks in ASRS, leading to costly idle time as pickers wait for tote availability. This impact on throughput can hinder a warehouse's ability to scale, limiting operational growth and emphasizing the need for scalable solutions that go beyond traditional hardware expansions.



As companies continue to adopt ASRS and GTP systems, they are better able to handle rising order volumes and achieve greater operational productivity.

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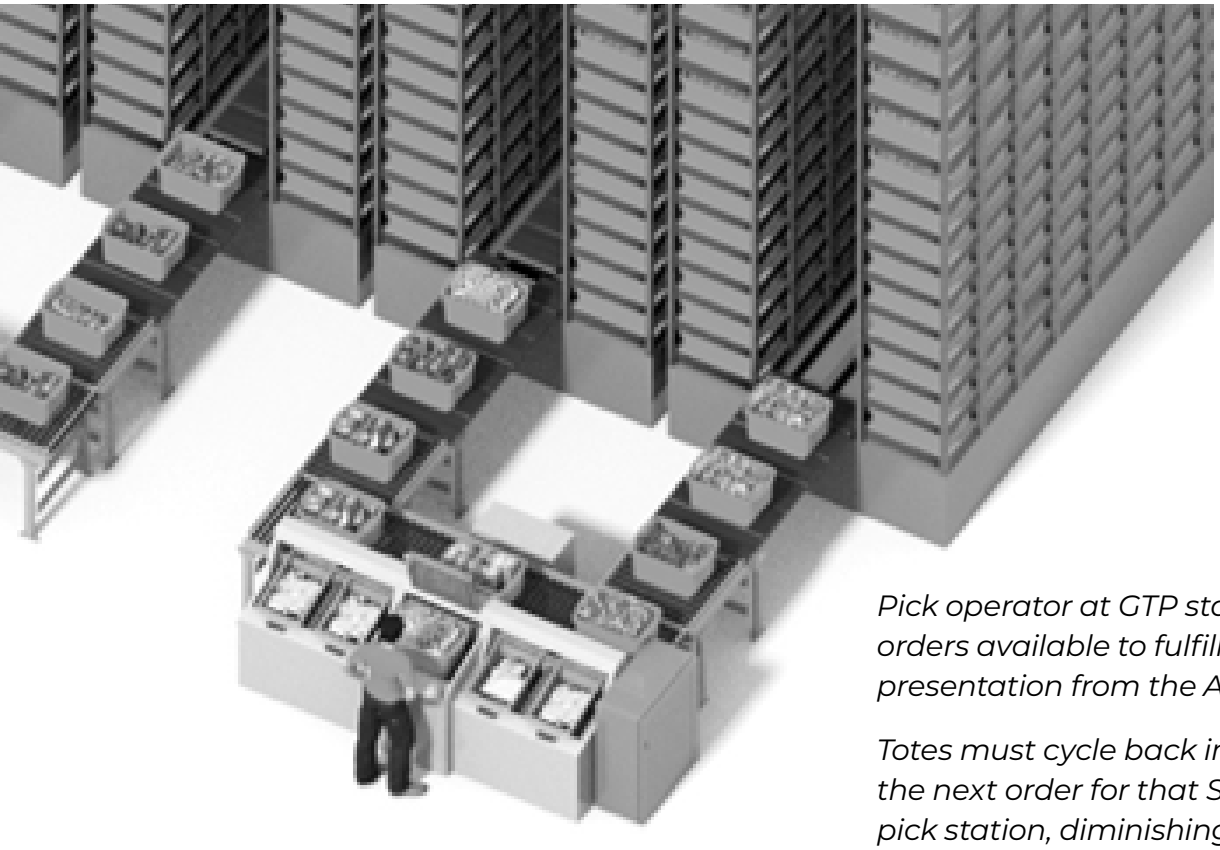
When faced with the need to improve capacity, expanding ASRS is typically the first solution considered. However, increasing ASRS capacity is rarely straightforward. In shuttle-based systems, for example, expanding capacity usually requires adding entirely new aisles, complete with additional racks, shuttles, and conveyance infrastructure. This expansion not only requires more physical space but also increases storage capacity — often beyond actual needs — while significantly adding to costs. In certain configurations, simply adding more shuttles or robots may inadvertently lead to congestion and offset the intended capacity gains.

Another commonly used approach is increasing the number of open orders at GTP stations. Typically, GTP systems are designed to handle up to four open orders, striking a balance between ASRS efficiency and picker productivity. Expanding the setup to support 20 or even 30 open destinations can indeed help alleviate pressure on the ASRS by allowing pickers to fulfill multiple orders per tote presentation. Traditional setups, like manual put walls or put-to-light systems, help manage this increased complexity but come with trade-offs. For example, they require pickers to spend more time scanning, sorting, and walking to reach each destination, which can impact productivity. Ultimately, even this number of destinations is often not enough to accommodate the large SKU counts and fluctuating demand profiles typical in eCommerce applications.



Pick operator at GTP station with four open orders available to fulfill with each tote presentation from the ASRS.

Totes must cycle back into the ASRS until the next order for that SKU arrives at the pick station, diminishing efficiency.

BG AMPLIFICATION:
SOLVING MODERN WAREHOUSE CHALLENGES

BG products multiply the benefits of other existing systems in your workflow (such as an ASRS) by delivering upstream and downstream efficiencies that eliminate bottlenecks and boost productivity related to picking, placing, sorting, and packing. The result is a solution that delivers higher throughput and productivity across the entire warehouse.

BG ROBOTIC PUT WALL — ECOMMERCE FULFILLMENT

Sort-to-shelf or sort-to-tote available

Up to 288 destinations (1,200 uph)

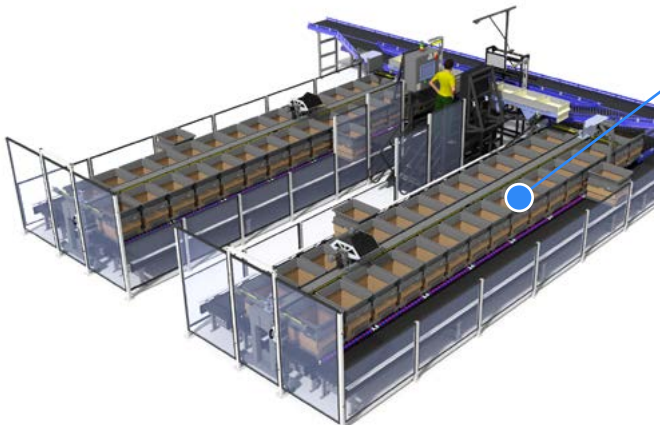
- ✓ Modular and scalable, accommodating wide item and order profiles
- ✓ Minimal footprint and fast deployment

AMPLIFICATION EXAMPLES:

Adding a robotic put wall with more sort destinations = **less lag waiting on totes**, and less physical demand from the ASRS (fewer tote presentations).

Adding a robotic put wall means you can do more with less — **maximizing efficiency of your ASRS in a smaller footprint** with excellent eligibility (less costly upgrades).

BG ROBOTIC SORTATION — STORE REPLENISHMENT



Operator or robotic induction available

Up to 228 destinations (1,800-3,000 uph / 1,100 transfers per hour)

- ✓ Best container utilization in industry
- ✓ Sort to store container; automated takeaway

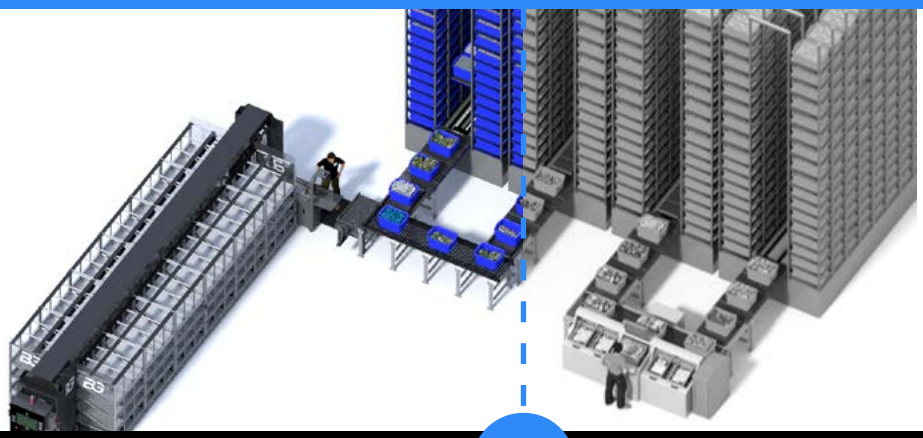
AMPLIFICATION EXAMPLES:

Adding robotic sortation = **zero-walking pick and pack**, saving time and energy for the picker (and better accuracy from less fatigue and smart system UI).

Adding robotic sortation with **no item singulation required** maximizes rates by picking all items needed per order in one touch (no scanning).

BG Amplification represents a breakthrough in warehouse automation, expanding how many open orders GTP systems can handle. Traditional GTP setups, typically limited to 20 to 30 destinations, restrict throughput and picker productivity. In contrast, BG Amplification offers configurable destination counts that can easily reach 10 times those in traditional systems — allowing pickers to pick more items from each bin presentation, minimizing both the impact of presentation rate to the picker and the need for multiple presentations of the same inventory to the same pick station.

EXAMPLE



BG Robotic Put Wall	VS	Traditional GTP Station
Up to 288 open orders can be sorted simultaneously at the BG Robotic Put Wall.		**Max 4** open orders at a time can be picked and sorted manually at the GTP station.
1 bin presentation of the SKU can fulfill as many as **288** orders per trip.		1 bin presentation of the SKU can only fulfill **1-4** orders per trip.
More available order destinations = fewer times the SKU bin needs to move back and forth from the ASRS to the put wall.		**Limited available order destinations =** more times the SKU bin needs to move back and forth from the ASRS to the GTP station.

With BG Amplification, operators experience an optimal workflow that allows them to effortlessly handle multiple orders simultaneously. By minimizing the need for repetitive tasks — such as walking between destinations and manually scanning items — BG Amplification reduces physical strain on pickers and cuts down idle time. This enhanced process enables pickers to achieve productivity levels far beyond those of traditional setups, where limited destinations and manual sorting tasks often constrain output. At the same time, automating repetitive tasks — such as validating the correct item quantity for each order — reduces the cognitive load that often leads to human error. As a result, BG Amplification not only improves productivity but also increases order accuracy over manual methods, helping to ensure that each order is fulfilled precisely as intended.

SEAMLESS INTEGRATION AND COMPATIBILITY

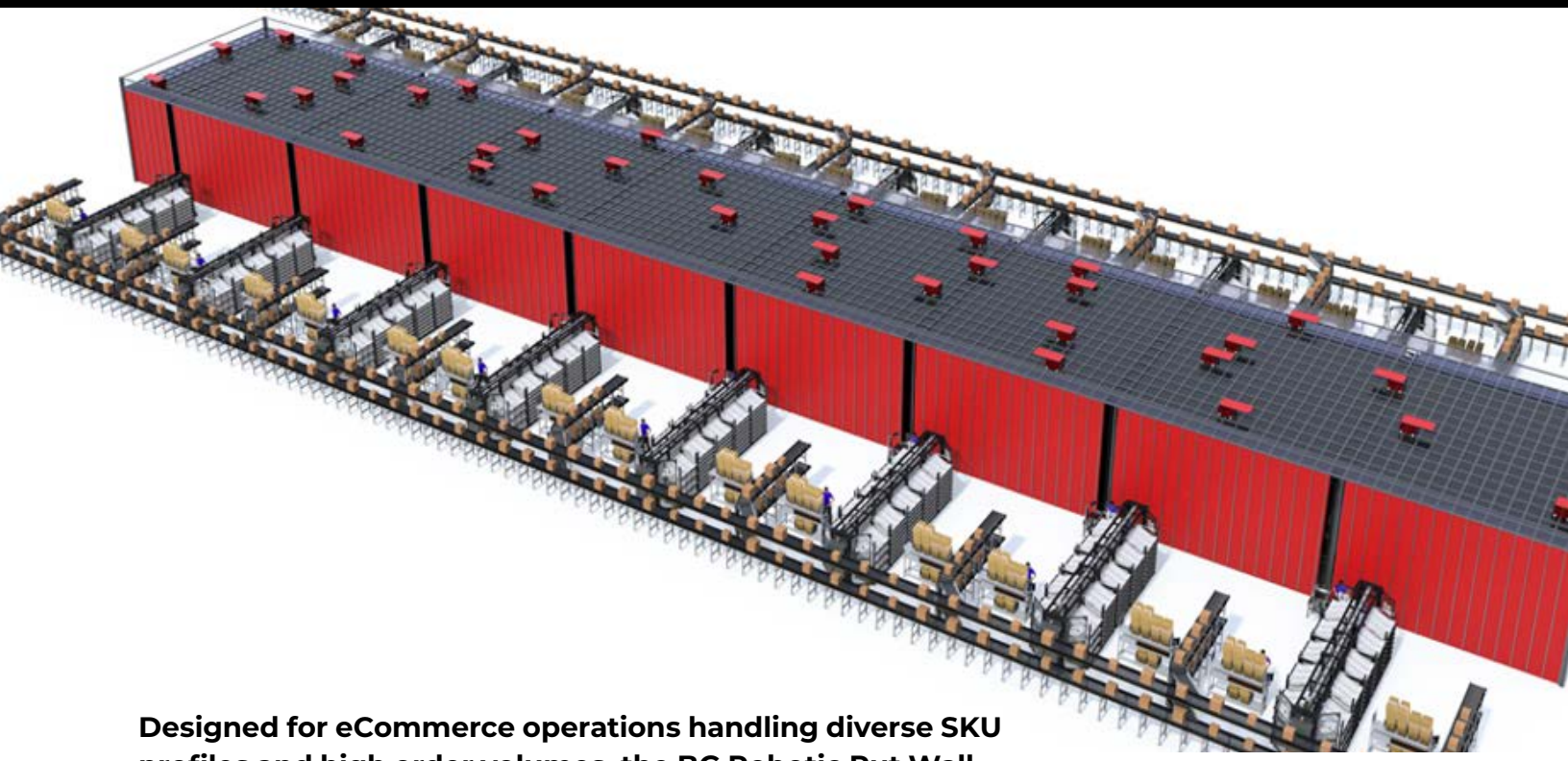
	Traditional GTP			BG Amplification
	1 open order	4 open orders	20 open orders	**200 open orders**
Orders Picked Per Tote Presentation	1	1.1 – 1.4	1.7 – 2.4	**3.4 – 3.8**
GTP Tote Presentation Rate (totes per hour)	250	250	250	**250**
Picker Productivity (units per hour)	250 – 350	300 – 350	350 – 450	**850 – 900**

Unlike conventional methods, BG Amplification achieves this expanded throughput without requiring additional ASRS storage or external buffers. It seamlessly integrates with existing infrastructure, even in systems where totes cannot exit the ASRS environment. This capability not only reduces costs but also ensures scalability, allowing warehouses to meet evolving requirements without major system overhauls.

BG Amplification also stands out with its exceptional item compatibility. Unlike many automation systems that struggle with certain items, BG Amplification is designed to handle a diverse range of SKUs, including small parts, round or rolling items, and other product types that can be problematic for traditional systems. This flexibility allows warehouses to automate more of their inventory flow without manual intervention, reducing operational bottlenecks and enhancing overall performance.

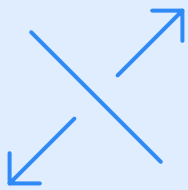
BG Amplification maximizes warehouse productivity by boosting throughput, enhancing order accuracy, and delivering exceptional performance without costly ASRS expansions. With high destination counts and broad SKU compatibility, BG Amplification is built to meet the complex pressures of modern fulfillment.

AMPLIFICATION WITH BG ROBOTIC PUT WALL:
PRECISION SORTING FOR HIGH-VOLUME ECOMMERCE



Designed for eCommerce operations handling diverse SKU profiles and high order volumes, the BG Robotic Put Wall optimizes order fulfillment within a compact footprint. Configurable with up to 288 destinations, this high-density sorting system allows for customized workflows, meeting the unique demands of each order profile. By integrating intelligent sorting capabilities, the BG Robotic Put Wall not only boosts throughput but also ensures accuracy, minimizing any manual intervention. This system seamlessly handles everything from small parcels to bulkier items, ensuring that all orders are sorted quickly and accurately, keeping pace with the speed of eCommerce.

KEY BENEFITS



Compact and Scalable

Fits easily into existing facilities without major modifications.

Enhanced Efficiency

Reduces the need for manual sorting, reducing labor costs while maintaining high precision.

Flexible Configurations

Adjustable to handle a wide range of SKUs and order profiles.

AMPLIFICATION WITH BG ROBOTIC SORTATION:
STREAMLINED STORE REPLENISHMENT

The BG Robotic Sortation solution is purpose-built for store replenishment, designed to maximize efficiency in preparing store-bound shipments. With capabilities for direct sortation into store-specific containers, this system increases container fill rates, reduces split shipments, and ensures each container is fully utilized. Featuring automated takeaway functionality, BG Robotic Sortation maintains a continuous workflow, minimizing bottlenecks and ensuring quick transfers of completed orders. This solution excels at handling high SKU volumes while delivering a modernized process for meeting retail replenishment expectations.

KEY BENEFITS

Optimized Fill Rates

Minimizes partially filled containers, maximizing each shipment's efficiency.

Flexible Configurations

Tailored to fit specific store replenishment needs, allowing for scalable growth without compromising capability.

Automated Takeaway

Ensures completed containers are immediately moved for dispatch, maintaining steady throughput.

AMPLIFY YOUR FULFILLMENT OPERATIONS WITH BERKSHIRE GREY

Unlock the full potential of your fulfillment operations with BG solutions for every warehouse.

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