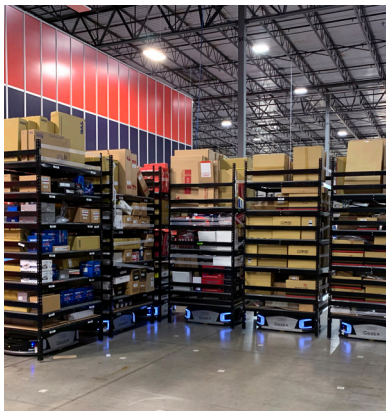
KPI SOLUTIONS™

Parts Authority

Windsor, Connecticut



The Client

Parts Authority is a leading national distributor of automotive and truck parts, tools/equipment, and transmission products to the aftermarket auto parts industry in the United States. The company serves customers in the commercial channel, including service centers, jobbers, fleets, and national accounts, as well as direct-to-consumer e-commerce. Headquartered in Lake Success, New York, Parts Authority offers customers access to more than 3 million parts through more than 250 locations across the Northeast, Mid-Atlantic, Mid-West, Pacific Northwest, and the Southwest.

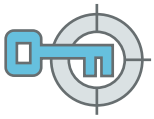
The Challenge

Looking to expand its footprint in the Northeast, Parts Authority's leadership secured an existing, 225,000-square-foot facility in Windsor, Connecticut. The company already operated more than a dozen large-scale, conventional distribution centers (DCs) strategically located across the U.S. to replenish their local branch stores and serve its different market channels. These existing operations house multi-level pick modules and rely heavily on manual picking for order fulfillment.

As part of a five-year plan, Parts Authority sought to use 75% of the Windsor facility's capacity to fulfill e-commerce orders, and the remaining 25% for traditional distribution fulfillment and hyper-local "hot shot" orders. Due to limited regional labor availability, leadership was concerned about the location's ability to attract and retain sufficient staffing if they equipped the facility as a conventional, manual operation.

Parts Authority engaged KPI Solutions™ to help evaluate their options, recommend a solution, and implement it.

AutoStore, Geek+ AMRs, conveyor, and automated outbound shipping box creation for a more streamlined and efficient process that minimizes touches



Significant reduction in walk time due to GtP automation has resulted in four times greater throughput than in manual operations

Optimized GtP system requires 40% fewer associates than manual DCs for a less than 3-year return on investment (ROI)

4x increase in picking and putaway productivity

5x increase in expansion capacity

4x increase in throughput

The Solution

In analyzing the Parts Authority's inventory, throughput, and order data from its other DCs, KPI determined that the manual operations have a low per person pick rate due to the extensive walking and order consolidation requirements. KPI advised Parts Authority to outfit the Windsor facility with an automated solution to increase throughput while reducing reliance on labor.

To minimize the amount of travel time spent by associates when replenishing inventory and filling orders, KPI designed a hybrid system that incorporates two goods-to-person (GtP) automated storage and retrieval systems (AS/RS):

- A high-density AutoStore system with more than 80,000 bins stacked 16-high and served by 90 robots covers approximately 23,000 square feet of the facility. The cube-based storage system holds more than 150,000 stock keeping units (SKUs).
- Mobile rack-to-person shelf storage holds 50,000 larger SKUs that don't fit in the AutoStore. A fleet of 40 Geek+ P800 autonomous mobile robots (AMRs) transport more than 1,200 48" x 48" x 96" racks throughout receiving, putaway, replenishment, and picking processes within the operation.

Additionally, because not every SKU handled in the facility fits in the AutoStore or Geek+ racks, two separate zones of selective pallet rack house oversized and bulky items, such as bumpers, transmissions, mufflers, and other large parts. Upon receipt, associates place those items on pallets transported by Geek+ robots to the pallet rack where a forklift transfers them to (and from) storage.

Receiving & Putaway

Upon inbound receipt, Parts Authority associates scan items, triggering the facility's warehouse management system (WMS) to decide where to allocate inventory based on size. Associates separate items based on their storage destination. Large, bulky items are placed on pallets. Everything else is placed on portable racks for either AutoStore or Geek+ storage zones.

When full, Geek+ robots retrieve the pallets or shelves and transport them accordingly through designated travel paths. Pallets travel to the racking for putaway by forklift. Racks of items destined for the AutoStore route to a specific restocking induction point outfitted with light-directed picking indicators. Products that remain on the Geek+ shelves are routed to a storage location selected by the Geek+ control software.

Picking, Packing & Replenishment

Parts Authority's Windsor facility operates three shifts. Associates pick during first and second shift from six AutoStore ports and six Geek+ points. They also restock the system continuously throughout first and second shift at three dedicated induction ports. During third shift, the six AutoStore picking ports convert to induction for additional restocking of the system.

AutoStore retrieves parts for multiple orders at a time and delivers them to operators stationed at one of six GtP ports. There, items are picked and placed into one of 12 different reusable totes as indicated by a put-to-light system. When an order is complete, its tote is pushed onto a takeaway conveyor supplied by Hytrol for routing to packing.

Geek+ operates in a similar fashion, presenting racks of larger parts to pickers working in a non-conveyable picking area next to a packing process. Any orders that require pick consolidation are collected, the order line items are confirmed, and packing occurs.

This area also utilizes automated taping, automatic print & apply for ship label application, and automated shipping box creation. Outbound cartons are automatically sorted by carrier; "hot shot" orders for customer pickup are routed to an internal customer service counter.

The Value

- 225,000 sq. ft. omni-channel fulfillment facility has a hybrid, automated GtP order picking solution utilizing AutoStore and Geek+ and KPI Software for e-commerce and store replenishment.
- The picking and putaway productivity within this new automated facility is four times that of Parts Authority's conventional DCs.
- Since the initial commissioning in May 2022, the Windsor facility has been expanded five times to add more conveyor, more Geek+ storage rack capacity, and new automated shipping box machines and additional conveyor.

KPI SOLUTIONS

1.844.KPI.1010 | info@kpisolutions.com | www.KPISolutions.com | 801 W. Markey Road, Belton, MO 64012