

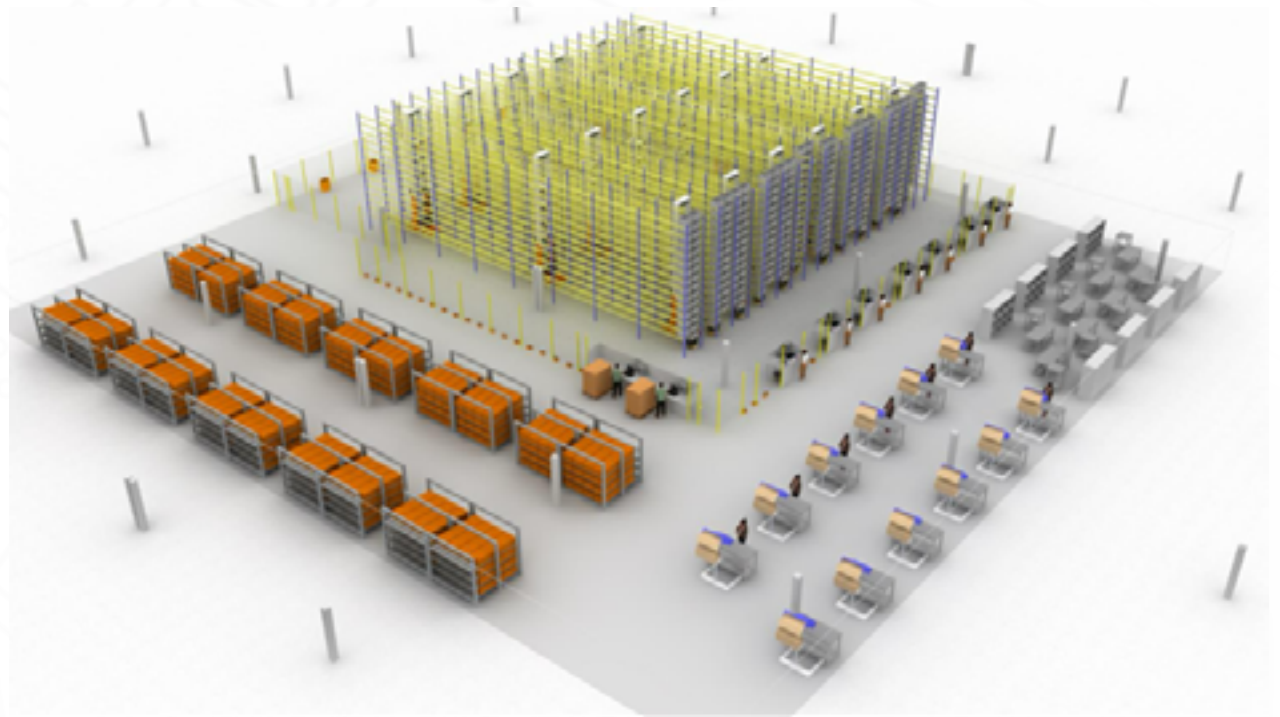
Automated Piece Pick System

For Low to Mid-Range Order Volume Rates



Overview

The **Dematic Automated Piece Pick System for Low to Mid-Range Order Volume Rates** uses **Autonomous Mobile Robots (AMRs)** to store and transport inventory for order assembly operations. The system picks, packs, and ships orders while making real-time adjustments to the daily variations in order profiles typical with multichannel applications.



1. Pallet Transport AMR
2. Tote Transport AMR
3. Tote Store and Retrieve AMR



1



2



3

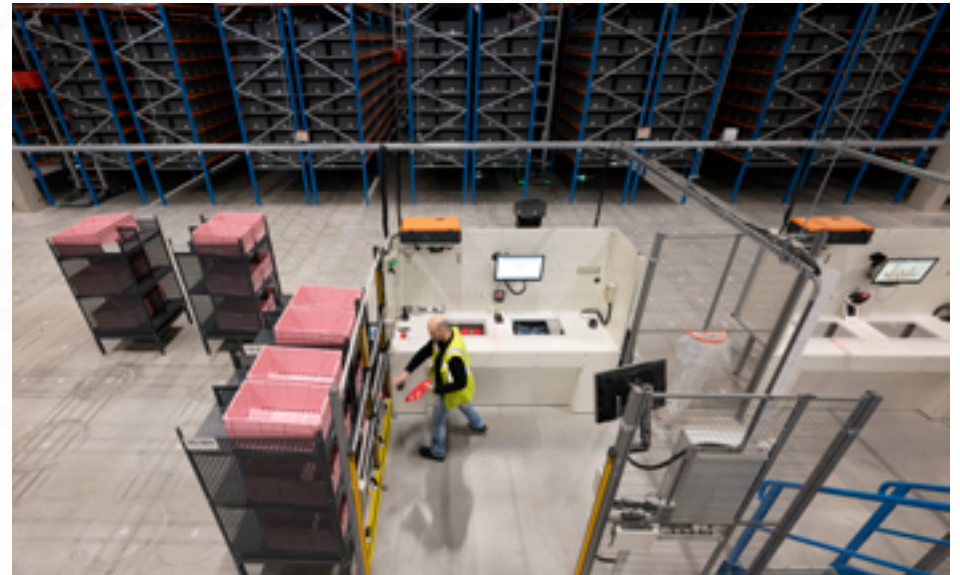
Benefits

Operational Value

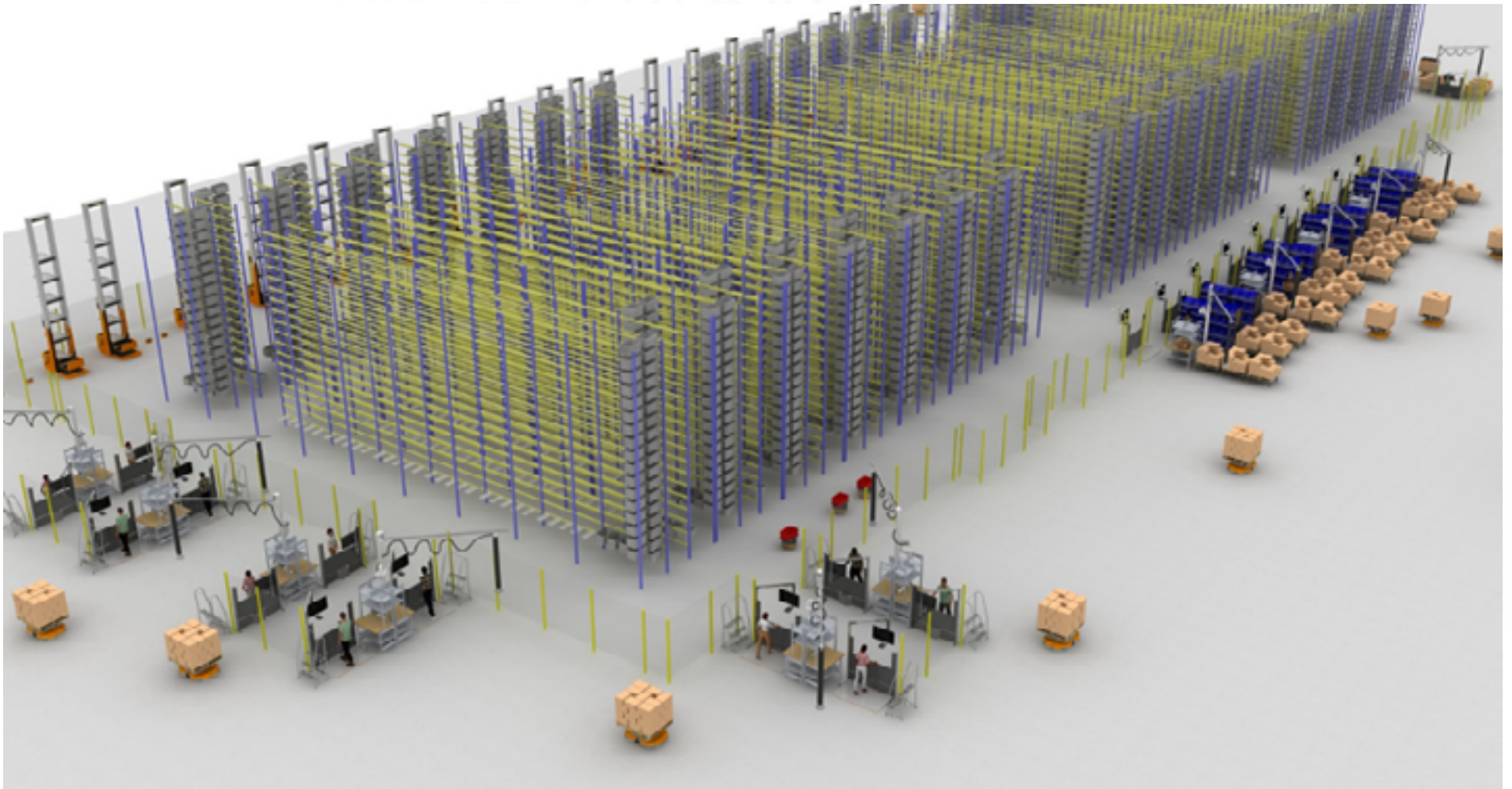
- Reduces time to process orders with automated fulfillment
- Reduces space required with high-density inventory storage
- Reduces cost to operate (less labor, less required space, fewer errors, less damaged inventory)
- Increases throughput volume, capacity, and productivity
- Increases rapid response capability for omnichannel retailing
- Increases customer satisfaction, order accuracy

System Attributes

- Need for operators to walk throughout the warehouse to search for inventory eliminated
- Manual pick face replenishment and slotting eliminated
- AMRs can be easily re-arranged or relocated
- No convey and sort infrastructure to maintain or rearrange
- Pick from various inventory source containers such as totes, mobile shelves, rack, and pallets
- Place items to destination containers such as cartons, totes, bags, mobile shelves, pallets, and gayords



System Description

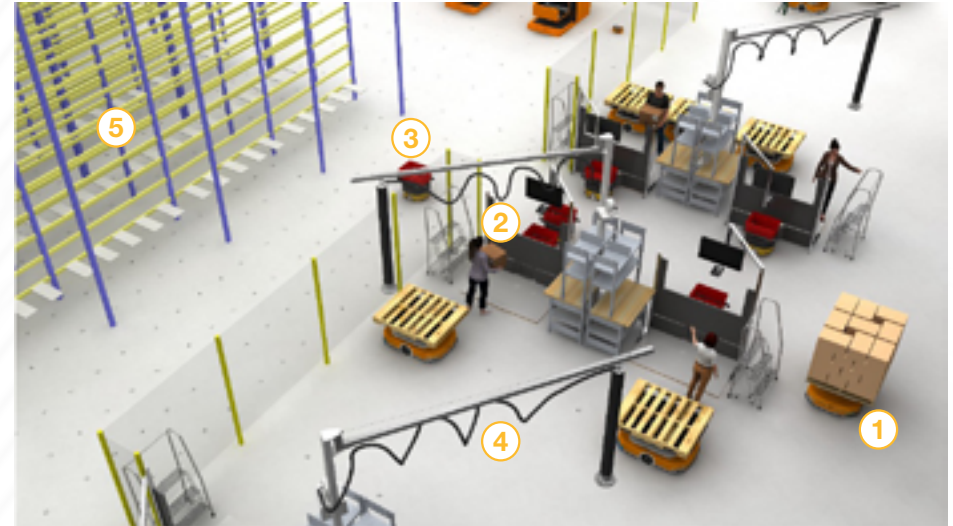


The **Dematic Automated Piece Pick System for Low to Mid-Range Order Volume Rates** has a modular, standardized design that provides consistent and predictable order picking performance. The execution software synchronizes labor, inventory, and an AMR fleet to assemble orders with speed and accuracy.

System Description

Decanting and Storage

The inventory is received, scanned, and transferred to the inventory storage sub-system by the pallet transport AMRs. At the dedicated inbound decant workstations, inventory is transferred to totes. Dematic Warehouse Management System (WMS) software manages put-away location management, inventory control, and real-time tracking. The AMR tote storage sub-system provides the storage of the received inventory.



(1) Pallet Transport AMR; (2) Decant Workstation; (3) Tote Transport AMR; (4) Optional Lift-Assist; (5) Tote Storage Rack

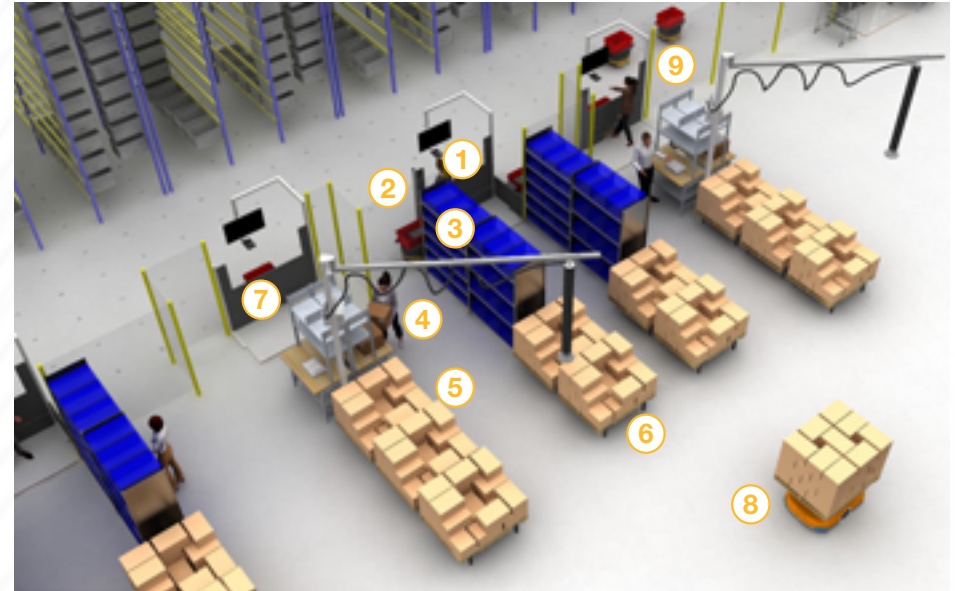
System Description

Workstation Management

Operators work in parallel at multiple workstations, unaffected by each other's pace. Workstations can be opened and closed as needed. The system provides full redundancy as orders can be processed at any location with all stations operating independently.

The workstations feature:

- Direct picking via flat screen
- Coordinated picking activity at multiple workstations
- Synchronized donor tote arrival at pick workstation



Order assembly, order consolidation, and packing workstations are supported by tote and pallet transport AMRs.

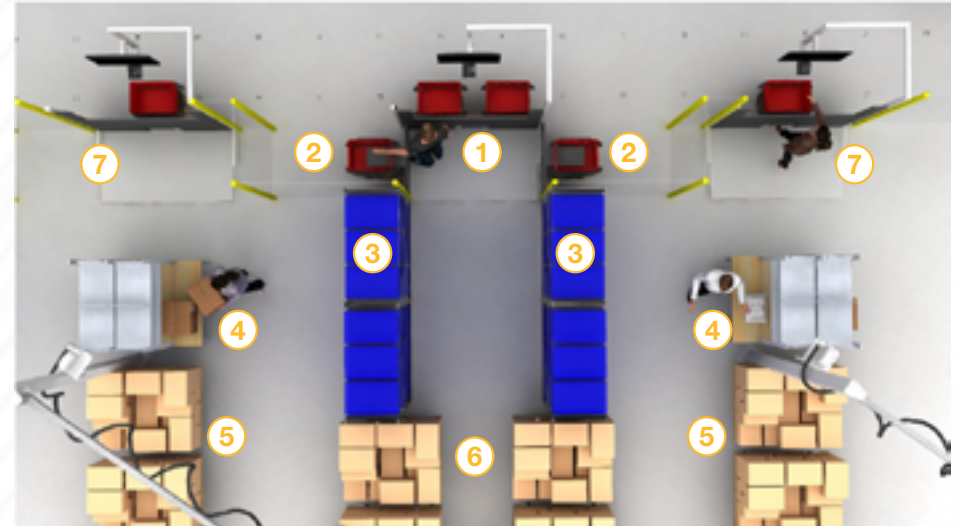
- (1) Order Picking Workstation; (2) Put-to-Store Tote Positions;
- (3) Put Wall for E-Commerce Orders; (4) Packing Workstation;
- (5) Courier Pallet for Outbound; (6) Large E-Commerce Items;
- (7) Reinduction for Store-Pickup Orders; (8) Pallet Transport AMR;
- (9) Tote Transport AMR

System Description

Piece Picking

Customer orders are downloaded from the Warehouse Management System (WMS). Orders can be downloaded in batch or continuously. After download, the Dematic WES plans and then releases the orders for processing, directing the tote storage and retrieval AMRs to retrieve inventory totes and for the transport AMRs to deliver them to the goods-to-person workstations.

Operators assemble multiple orders at the ergonomic workstations simultaneously. Flat screens provide picking instructions using images, colors, icons, and numbers to facilitate speed and accuracy. Operators place order items into order containers. Transport AMRs take the orders to packing workstations or directly to outbound shipping.



Plan view of piece picking, order consolidation, and packing workstations.

- (1) Order Picking Workstation; (2) Put-to-Store Tote Positions;
- (3) Put Wall for E-Commerce Orders; (4) Packing Workstation;
- (5) Courier Pallet for Outbound; (6) Large E-Commerce Items;
- (7) Reinduction for Store-Pickup Orders

System Management

The Dematic WES software synchronizes the labor, inventory, and AMRs to assemble orders with speed and accuracy. The entire process is optimized from put-away and storage to order picking and packing.

Dematic WES accommodates the quantity of SKUs and order volume required. Order management, planning and execution strategies ensure efficient and responsive fulfillment. SKU storage location and order management strategies are included to optimize the order picking process. Priority orders are inserted to the top of the queue. Picking multiple orders at each workstation simultaneously increases throughput. The software is scalable and can be expanded or re-configured for future change. Scan validation ensures order accuracy.



About Dematic

Dematic designs, builds, and supports intelligent automated solutions empowering and sustaining the future of commerce for its customers in manufacturing, warehousing, and distribution. With research and development engineering centers, manufacturing facilities, and service centers located around the world, the Dematic global network has commissioned thousands of customer installations for some of the world's leading brands. Headquartered in Atlanta, Dematic is a member of KION Group, one of the world's leading suppliers of industrial trucks and supply chain solutions.

Power the Future of Commerce

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