

Order Picking Solutions

Faster & Safer – Kardex Remstar Order Picking Solutions



Order Picking Solutions: For maximum efficiency of your picking and putting processes



Rapid and accurate order processing is key to the success of your enterprise – and has a positive effect on the satisfaction of your customers. However, picking and putting processes can be labor intensive and claim a large part of the general overhead costs.

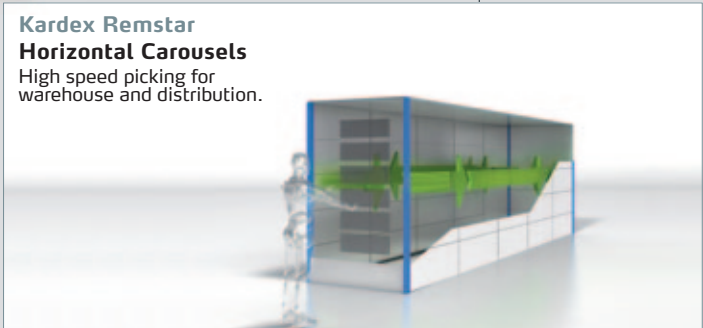
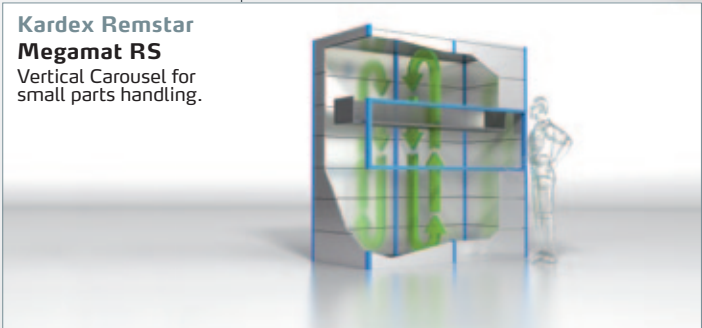
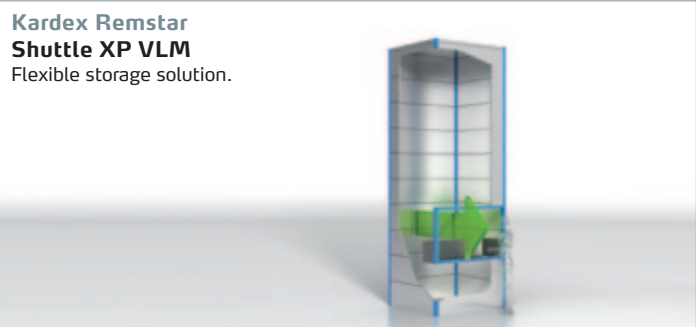
Automated storage and retrieval systems significantly help reduce the time spent on order processing and minimize your workload while increasing productivity and picking accuracy. Compared to conventional storage systems, Kardex Remstar systems can optimize your logistics areas – offering your customers even better service.

Kardex Remstar is one of the world's leading manufacturers of automated order picking solutions. Each system is specifically designed to make your working processes more productive and efficient by integrating economically efficient and well devised concepts with proven technologies. Our solutions allow you to optimize your storage capacity while at the same time reducing the cost of handling goods.

The degree of automation can be matched to your business processes and specific criteria such as investment amount, flexibility and risk. Our solutions also take into account the working

conditions of your employees as well as other factors such as stress, ergonomics and motivation.

Modular structure and an intelligent order picking principle – the double benefit of more flexibility and storage space.



Kardex Remstar order picking solutions feature a modular design and can be custom tailored to your specifications. Kardex Remstar systems combine logistic processes with proven storage and retrieval technology offering you increased efficiencies. From our various standard modules and processes, we can develop – always in close cooperation with you - the custom order picking solution that best suits your application.

Many organizations in the manufacturing, distribution and warehouse sectors already focus on the obvious advantages of our order picking solutions. Let us help you optimize your material flow

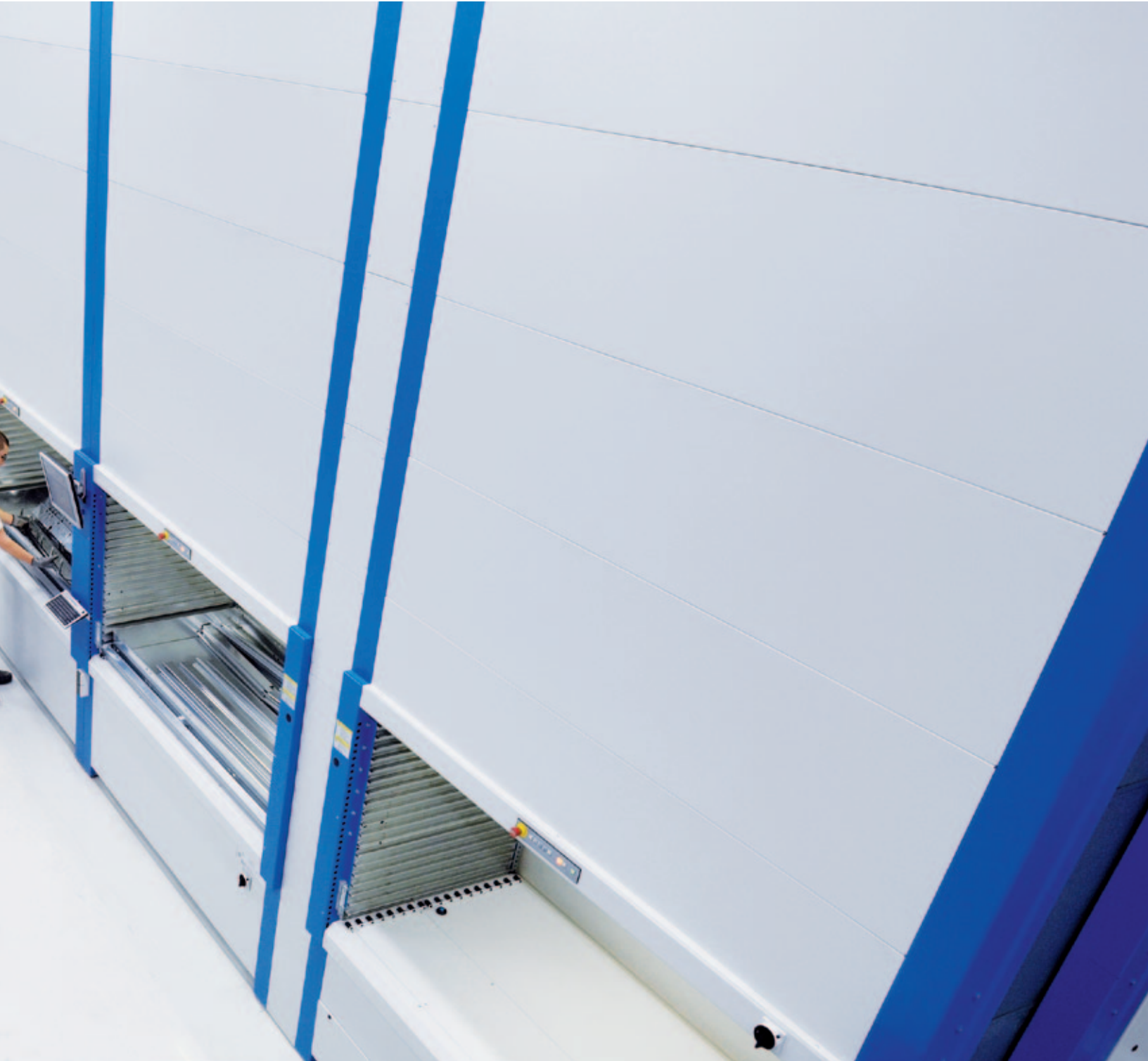
with order picking solutions by Kardex Remstar – for increased productivity, performance, and accuracy!

Your Advantages at a Glance:

- Cost Efficient Solutions Based on Our Standard Products and Processes
- Increased Picking Accuracy
- Flexible Layout Design & Easy Expandability
- Minimized Risk Due to Reduced System Complexity

Order Picking Solutions: Intelligent, flexible, modular – Order picking at the highest level





Order Picking Solutions: We take full care of you and your products



Kardex Remstar Order Picking Solutions allow for the processing of complex orders- reliably and within the shortest possible time. Rapid order processing at the highest quality level- even during peak workload times – guarantees you maximum productivity and optimal flow of goods in your warehouse.

Our modular storage and retrieval systems can be combined in many ways and are ideally suited to meet your every business need. Each system allows picking and putting in one or more zones; one station may correspond to one zone, or one order per station may correspond to one bin. The goods are automatically presented

and manually picked at the access openings. The operator puts the goods into the bins; they are then transported directly to the next station or collection point.

Scalable

- Fast, secure, and process oriented picking and putting
- Expansion possibilities through modular structure
- Automated inventory check
- Integrated supply processes
- 1,000 to 50,000 order positions per day

Economical

- High efficiency through automated presentation of goods
- High productivity, consistently high quality and failure protection – also during peak times
- Reduced staff requirement for picking and putting operations
- Optimization of storage capacity through effective space utilization

Secure

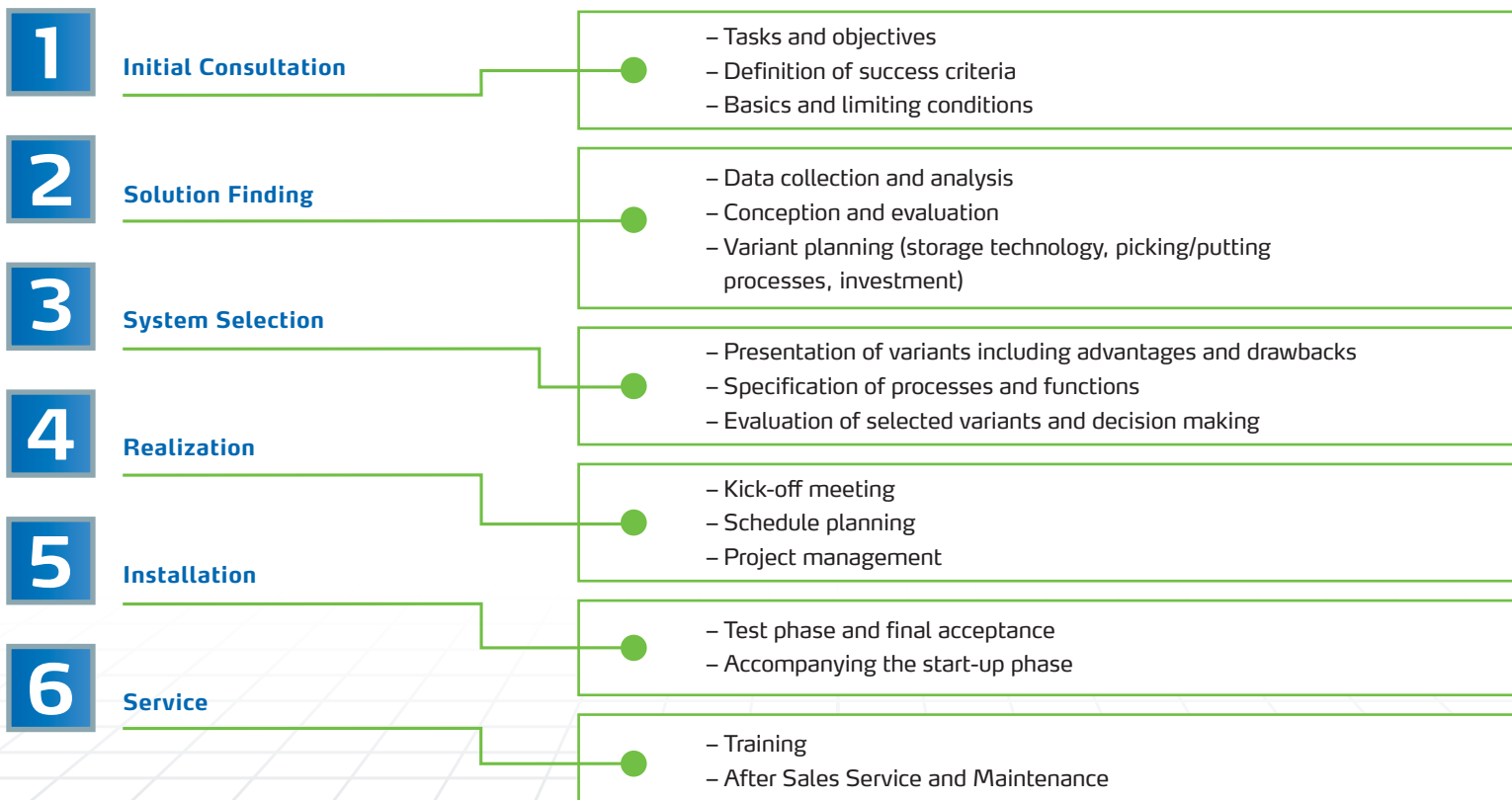
- Goods are protected against unauthorized access
- Allocation of picked goods to individual users
- Closed casing protects goods against external influences
- Air-conditioned, clean-room and fire protected solutions

Economically efficient, demand oriented order picking system solutions.



From initial meetings to integration to regular maintenance of your storage and retrieval systems, the qualified and competent personnel at Kardex Remstar are always there to support you. Right from the very start and in close cooperation with you, we plan and analyze your operations and identify the requirements that are essential to achieve optimal integration of your Kardex Remstar Order Picking Solutions.

We Are There Every Step Of The Way:



Solution Variant 1: Optimized utilization of storage space with a minimal footprint



Picking Process

All orders are available at the work station in paper form. A picking cart with empty bins is available, the number of bins depends on the application.

The operator scans the first order and puts the order documents into the first bin – this process is repeated until all empty bins are filled with order documents or until there are no orders left. The order bins are filled in the order they are placed onto the picking cart. The batch is confirmed and ready for fulfillment.

The storage unit moves to retrieve the parts required to fulfill the orders. The display on the screen informs the picker which storage unit to pick from. The pick-to-light at the storage unit directs the operator to the exact location and displays the part name and quantity to be picked. The operator picks the parts, puts them into the order bin and confirms

Suggested Solution

- One Work Station Consists of:
- 3 Shuttle VLMs or 3 Vertical Carousels with Pick-to-Light Technology
 - 1 Operator, One Picking Cart
 - 1 PC with Flat Screen and a Hand Scanner

Performance

- 1 picker per station can process between 80 and 200 order lines per hour
- An ideal order comprises 3 to 5 order lines



the pick. These steps are repeated until all orders are filled. The picking cart with the completed orders is taken to the next work station for further fulfillment or directly to the collection point.

Replenishment Process

The replenishment bins contain a quantity of one part number and for the purpose of easier identification are marked, for example, with a different color bin. The bins are positioned at the picking station. Replenishment operations should not be carried out at the same time as order picking operations.

The operator scans each bin, once all bins have been scanned the replenishment batch is formed. The display on the screen informs the operator which bin on the picking cart to pick from, including the quantity; and which storage unit to put the part into. The pick-to-light at the storage unit directs the operator to the

location in the unit and displays the part number and quantity to store. Storage of the parts is validated at the machine. These steps are repeated until all replenishment orders have been completed and the bins are empty.

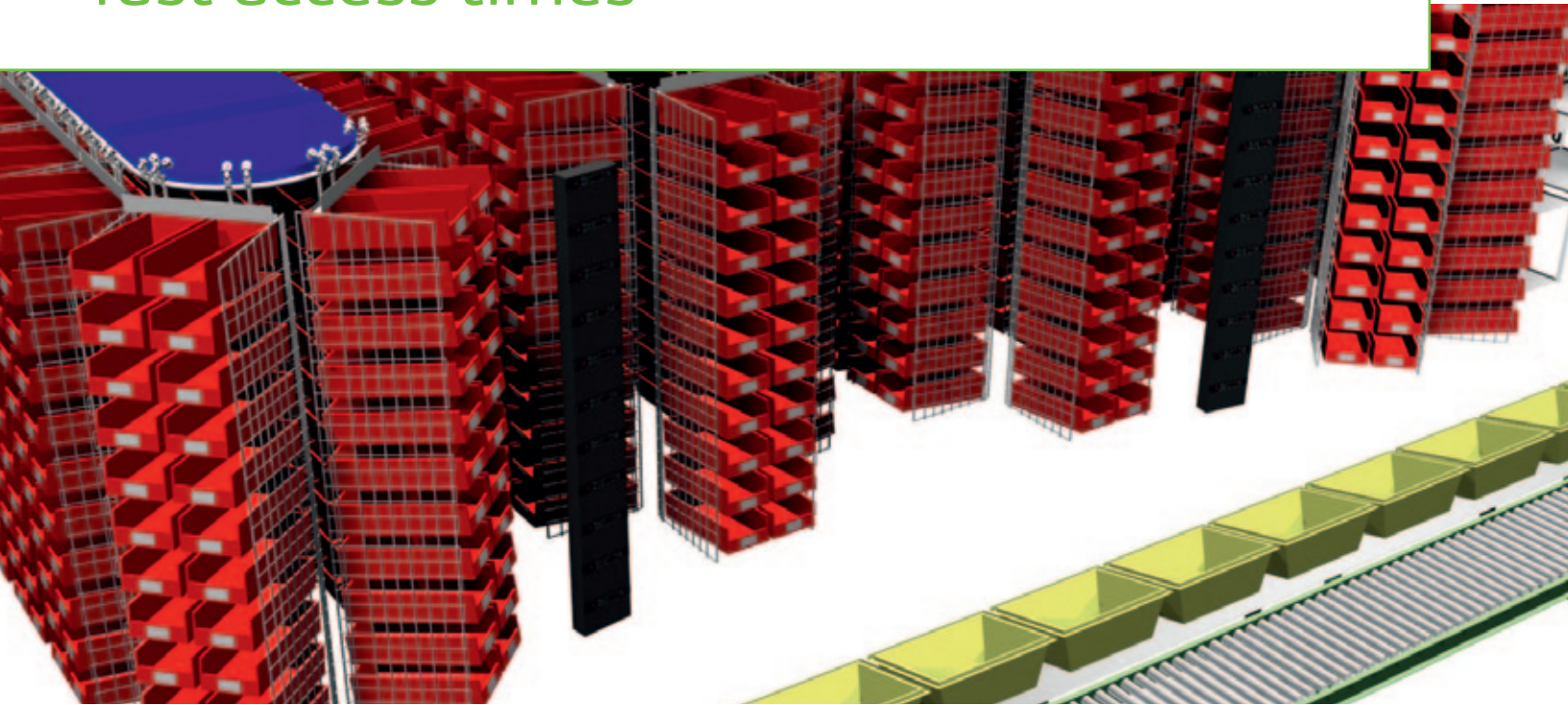
Expansion Possibilities

- Upgrade of the picking cart with pick-to-light display

Your Advantages at a Glance:

- Optimal Utilization of Storage Capacity
- Simple, User Friendly Picking & Putting Operations
- Automated Processes
- Fast & Easy Integration

Solution Variant 2: Order picking solutions for fast access times



Suggested Solution

- One Work Station Consists of:
- 3 Horizontal Carousels with Pick-to-Light
 - 1 Operator
 - Multiple Picking Stations, Each Equipped with Pick-to-Light
 - 1 Conveyor for the Supply and Removal of Bins
 - 1 Location as a Buffer for Empty Bins
 - 1 PC with a Flat Screen and a Hand Scanner

Performance

- 1 operator can process between 200 and 400 order lines per station and hour
- An ideal order comprises 3 to 5 order lines; a batch consists of 5 to 10 orders

Picking Process

The number of picking and putting locations and pick-to-light displays is determined by customer specific requirements. Order print outs and empty bins are already available at the order picking station.

The operator places the empty bins on the picking station and scans the bar code on the bin and then scans the order print-out to associate the bin location with the order. The order print out is placed into the order bin. Completion of this process is then confirmed, and a new batch has been formed and is ready for fulfillment.

The horizontal carousels spin into position and the screen directs the operator to the carousel to pick from. Pick-to-light technology at the horizontal carousel directs the operator to the exact location, indicating the quantity to be picked. The pick-to-light at the picking station directs



the operator to how to distribute the parts picked among the order bins on the picking station.

If the order bin is full, the operator can take an empty bin from the buffer. The operator scans the full order bin and scans the new bin from the buffer to associate two bins to one order.

Your Advantages at a Glance:

- High Density Storage in Rooms with Low Ceiling Height
- Flexible Restructuring Options
- Low Error Rates Due to Multiple Validations
- Automated Processes

The operator confirms the order completion on the pick-to-light at the picking station and pushes it onto the conveyor. The conveyor system transports the bin directly to the next picking station or to the consolidation point.

Replenishment Process

Replenishment orders are sorted by item and, for the purpose of easier identification, marked for example, with different colors. The replenishment process should not be carried out at the same time as the picking operations.

The operator places replenishment bins, which are transported manually to the work zone, onto the picking station. The operator scans the order print out in each replenishment bin to associate the replenishment order with a location on the picking station. When all replenishment bins are scanned the batch is ready for replenishment.

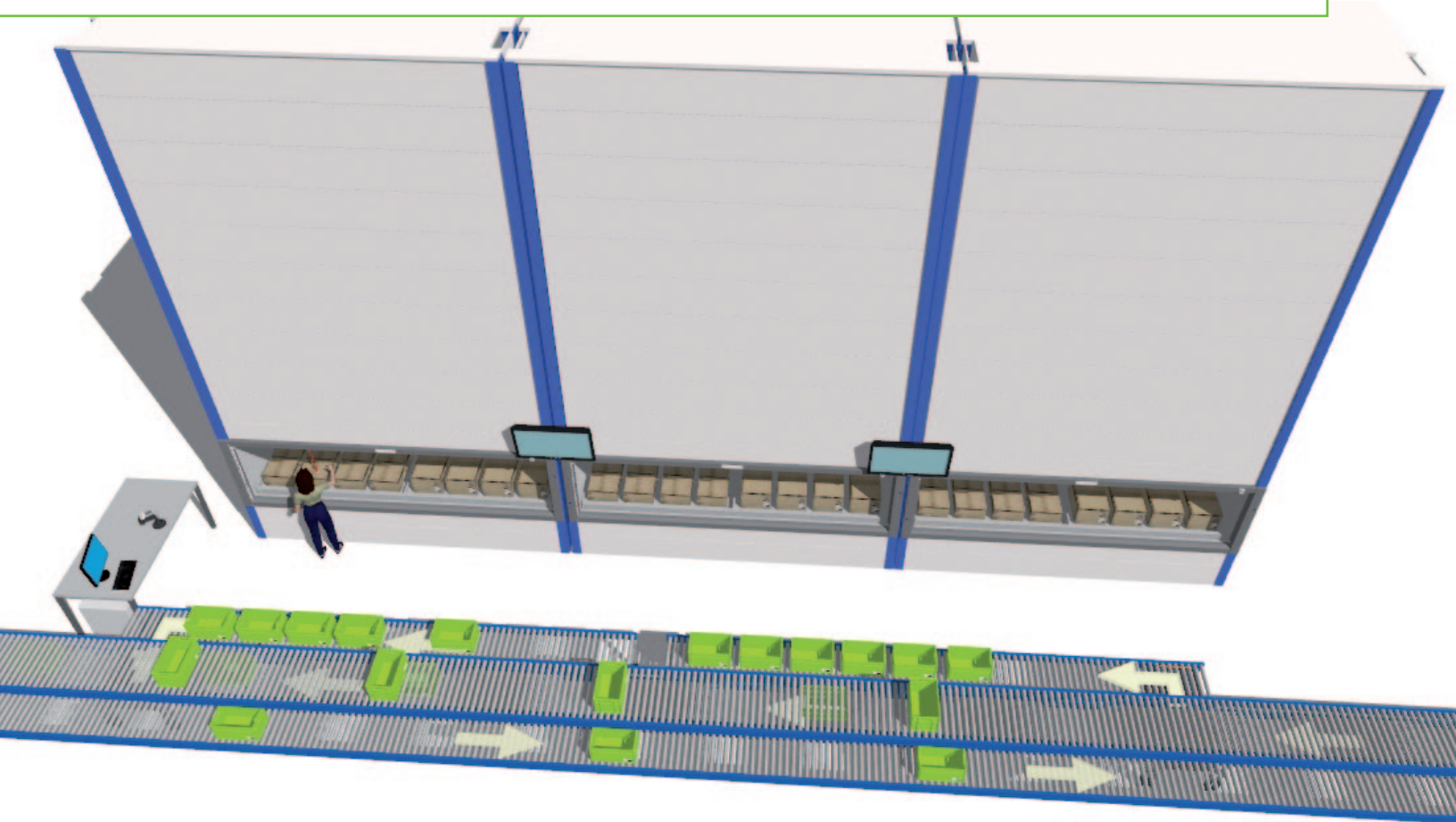
The pick-to-light display at the picking station directs the operator to the correct bin to pick the parts from. The horizontal carousel spins into place and the screen informs the operator which carousel to store the parts into. The pick-to-light display at the carousel directs the operator to the exact location to store the parts and confirms the put. This process is repeated until all replenishment orders are processed and the bins are empty.

The empty bins can be collected in the buffer area at the picking station, or transported to the consolidation point.

Expansion Possibilities

- Automated supply of empty and replenishment bins by conveyor system

Solution Variant 3: Everything flows – Intralogistic solutions from one single source



Suggested Solution

One Work Station Consists of:

- 3 Shuttle VLMs with Pick-to-Light
- 1 Operator
- 2 Conveyor Sections (powered roller conveyors)
- Section 1 is a Buffer for Picking and Replenishment Bins
- Section 2 Consists of Several Picking Locations, Each with Pick-to-Light
- Conveyor Lines to Supply and Remove Picking and Replenishment Bins
- 1 Conveyor Line as a Buffer for Empty Bins
- 1 PC with a Flat Screen and a Hand Scanner



Performance

- 1 picker per station can process between 100 and 250 order lines per hour
- An ideal order comprises between 3 and 20 order lines

Picking Process

This system works entirely without paper: All picking orders are available online; all bins are already linked to the corresponding orders.



The amount of order picking locations and pick-to-light displays and the buffer capacity are determined by customer specific demands.

After automatic barcode scanning, the conveyor system transports the order bins to the respective stations for fulfillment; here they are kept in the buffer. When the buffer is full and the picking locations are empty, they are transported to the pick locations. The batch is automatically formed and the pick-to-light displays are activated. The operator can also create batches on demand by pulling buffered bins to the order picking locations, for example to form smaller batches. In this case, the operator links the bin to the picking location with the help of a hand scanner.

The Shuttle VLMs move to retrieve the parts required and the screen informs the operator which VLM to pick from. The pick-to-light at the VLM directs the operator to the location within the tray and displays the part number and quantity to pick. The operator distributes the

parts as directed by the pick-to-light at the picking station, placing the right quantities into the correct order bins. If an additional bin is needed to complete the order, the operator takes it from the buffer and scans both bins to associate them with one order.

Finished orders are confirmed on the pick-to-light at the picking station and pushed onto the conveyor line to be transported to the next picking station or consolidation point.

Your Advantages at a Glance:

- Paperless Picking and Putting
- Low Error Rates Due to Multiple Validations
- Automated Processes
- Expansion Possibilities

Replenishment Process

The replenishment bins are sorted by item; they are already linked to the replenishment orders. Ideally, replenishing should not take place at the same time as picking.

Transporting the replenishment bins to the respective work stations and batch creation follows the same steps as the picking process. Pick-to-light indicates the target bin to pick from, the screen indicates the target machine to put to and the pick-to-light directs the operator to the exact location within the machine displaying the part number and quantity to be stored.

The operator confirms the successful storage of the parts at the machine. This procedure is repeated until all putting orders are completed. When batch generation is completed, the operator receives a respective message. The empty bins can be pushed onto the conveyor line or positioned at the upper part of the buffer line.

Kardex Group:

Your reliable partner for automated storage and retrieval systems



kardexgroup

The Kardex Group is one of the world's leading manufacturers of automated warehouse and office logistics systems.



Our organization is specialized in the development of innovative products, services and customer consultancy. In close cooperation with you, we work towards strengthening your competitive position significantly by exceeding your expectations and requirements.

Through the successful implementation of our business aims, we offer our employees a portal full of opportunity and prospects for challenging and lively careers.



kardexremstar

Kardex Remstar is one of the world's leading manufacturers of automated storage and retrieval systems. Since 1973, we have installed over 140,000 systems successfully in the "Office", "Warehouse" and "Commerce" segments.

Each of our products has been developed with the aim of increasing your productivity and improving the efficiency of your work processes. Our tailor-made solutions allow you to make the best use of your warehouse space.

kardexmlog

Mlog Logistics GmbH, with its head office in Neuenstadt am Kocher, is one of the leading providers of automated storage and material flow systems. Since May 2010, it has been part of the Kardex Group and has over 40 years of experience in the planning, implementation and maintenance of fully automated logistics solutions. Whether modernization in service is required or the installation of new turnkey installations, Kardex Mlog has the best logistics concept for your high bay warehouse.

Thanks to innovative and proven products and complete logistics concepts based on experience gained from more than 800 successfully implemented projects, Kardex Mlog can respond to your requirements quickly and flexibly.

Kardex Remstar: Always close to you – Worldwide



Australia
Austria
Belgium
Canada
China
Cyprus
Czech Republic

Denmark
Finland
France
Germany
Great Britain
Hungary
India

Ireland
Italy
Mexico
Netherlands
Norway
Poland
Russia

Singapore
Slovakia
Spain
Sweden
Switzerland
Turkey
USA



1109B-0214-US-1001-HT

Further information:
www.kardexremstar.com