

Robotic sequencing of mail trays ensures maximum utilization of sorting machines

Automated storage and sorting of mail trays enabled PostNord to shorten handling times at two new sorting centers in Sweden.

THE CHALLENGE

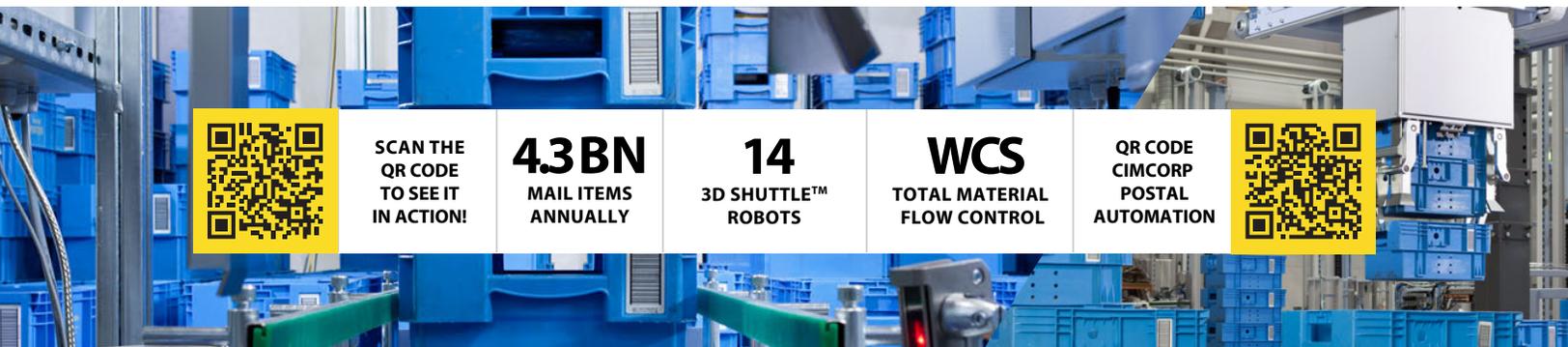
PostNord is the leading supplier of communication and logistics solutions within the Nordic region, providing the universal postal service in Sweden and Denmark. It is the only player that reaches all households and businesses in the two countries, a factor that has helped it to capitalize on the growth of e-commerce. PostNord has some 6,250 distribution points and around 31,000 employees.

With letter volumes in decline due to digitalization, PostNord decided to invest in a significant overhaul of its network – in terms of both geography and technology – to protect profitability. The result was two brand-new sorting centers in Hallsberg and Rosersberg, strategically located close to Sweden’s main railway lines. The contracts for the design and supply of the automated handling systems for these greenfield sites were awarded to Cimcorp.

THE SOLUTION

As a state-owned business, PostNord used a stringent tendering process. Supplier evaluation included a range of factors, including experience. PostNord sought a supplier with proven know-how in the postal industry because the first installation – at Hallsberg – needed to be right first time.

It was during specification of the Hallsberg systems that it became clear just how important the handling solution would be. “We realized that we could gain a significant amount by improving the internal logistics,” explained Staffan Strömhage, Project Manager for PostNord at the time. “Suddenly the material handling became critical. It is, in fact, the beating heart of the sorting center. Just like a heart pumping blood around the body, the system drives mail to the sorting machines – which are the value-adding part of our operations – in the most efficient way.”



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14
3D SHUTTLE™ ROBOTS

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Passion for optimized material flow

Established in 2009 through the merger of Post Danmark A/S and Posten AB, PostNord is owned 40% by the Danish state and 60% by the Swedish state. PostNord delivers some 4.3 billion mail items and 154 million parcels each year.

THE CIMCORP SOLUTION

for mail tray handling, sorting and sequencing consists of gantry-type robots, which operate a buffer store at the core of the system, and a high-speed conveyor loop that connects this area with the mail acceptance, sorting and dispatch areas. The gantry robots store and sort trays of mail in stacks placed directly on the floor, forming a buffer between mail acceptance and the sorting machines, as well as between the sorting machines and dispatch. The robots also take care of tray sequencing for the sorting machines.

THE ROBOTS OPERATING

at both Hallsberg and Rosersberg feature Cimcorp 3D Shuttle™ technology. This design innovation comprises an integrated shuttle that runs along the gantry – independently of the robot – to deliver a picked tray to a conveyor belt that runs alongside the storage area. This means that the gantry robot can return immediately to its sorting and retrieval operations while the shuttle takes care of this transport task.

A TOTAL OF 14 CIMCORP 3D SHUTTLE™ ROBOTS were supplied to PostNord, seven at Hallsberg and seven at Rosersberg. Featuring regenerative braking and excellent energy efficiency, the robots have a low environmental impact. Cimcorp also supplied its WCS (Warehouse Control System) software at both sites for total control of the material flows.

BENEFITS & RESULTS

Automation helped to secure a number of benefits:

OPTIMAL PROCESS FLOW results from the integrated tray handling, sorting and sequencing. Through automation of the workload and by making



— *Increased technology does not have to mean that a solution is complicated. Cimcorp offers a simple solution to solve a difficult task. To create simplicity out of complexity, you need innovation.*

Staffan Strömhage
Project Manager for PostNord

trays ready for shipment in a more efficient way, handling time at the sorting centers was shortened.

BOTTLENECKS ARE AVOIDED because the robots can focus on storing unsorted trays during peak periods, only returning to the task of sorting them once any peaks have been cleared. The fact that the robotic area can never form a bottleneck is especially beneficial in the time-critical final sweeping of the sorting machines.

IMPROVED SORTING ACCURACY AND CAPACITY are achieved through the automation, making it easier for PostNord to meet its service commitments.

Robotic handling is extremely fast and totally accurate, with optimized process flow enabling rapid final sweeping and fast vehicle loading. The robots are also able to organize trays into larger batches for the sorting machines than a manual solution, allowing them to run for longer periods with the same set-up and thereby increasing overall processing capacity.

COST SAVINGS naturally result from the shorter handling times, higher system throughput and minimized idle time between passes for the sorting machines.

GREATER TRANSPARENCY is provided through Cimcorp’s control software, giving PostNord a much better overview of production and performance.

OPTIMUM SPACE UTILIZATION is achieved through the gantry robot concept. With goods accessed from above, there is no need for space-wasting aisles and large conveyor sequencers.



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