Automating the ‘last mile’ of package deliveries

Over the last few years, the logistics sector has seen rapid growth, driven mainly by the boom in e-commerce, and customers are expecting faster and more reliable deliveries. The ‘last mile’ of a package’s journey centers around the fulfilment facility that collects and sorts it into the correct bin for delivery. Historically a manual operation, parcel sorting is increasingly becoming more automated, enabling logistics businesses to improve productivity and efficiency.

Modern computer vision technology is enabling sortation to be automated, removing staff from mundane operations and allowing them to carry out more complex tasks. The use of optical character recognition enables parcels to be quickly scanned and assigned to a bin that will collate all the packages for a delivery area. Automation allows line speeds to be increased and reduces sorting errors, boosting efficiency.

The changing shape of logistics

As volumes have increased, so too has the variety of packages. The use of plastic polybags for clothes and small items has also introduced problems for conveyor systems using rollers that can trap or damage some items. This can be overcome by using totes, but the additional investment and work required to transfer the boxes onto and off the conveyors can reduce productivity. At the same time, the variety of package shapes and weights has also increased, making the sortation process even more complex.

The solution to overcoming these challenges lies with a conveyor system that can handle the vast majority of packages and quickly divert them to the next part of their journey. Rollertop belts are the most effective and safest method of sorting packages. Having identified the destination from the barcode, zip code or hand-

written address, the warehouse management system communicates with the rollertop belt equipped sorting modules, which move the package along the conveyor system and divert it into the correct delivery bin.

Beyond the improved efficiencies, rollertop belts equipped soring modules, such as Regal Rexnord's Modsort™ range, are also optimized for safety, powered by a 24-volt supply they also ensure operators are protected from injury as they can be stopped by hand, which also minimizes the risk of damage to the packages. Furthermore, they are quiet, so operators do not need to wear hearing protection when working around the conveyor system.

Minimizing process footprints

Beyond the sorting process, transporting all the packages around the facility requires hundreds of meters of conveyor systems including curves, which help to minimize the footprint of the equipment. One of the challenges with traditional belted curves is the variety of belt lengths and widths that need to be held for spare parts.

However, Regal Rexnord™ has overcome this issue with its RCS1540 curve system, which uses multiple tracks equipped with a modular chain which can be configured for any curve up to 180 degrees. It offers a compact footprint, the same angular speed for each track and minimal spare parts holding requirement. Standardized with the rest of the case handling portfolio, this modular system is easy to configure and cost-effective to maintain.

Delivering tomorrow's solutions

Introducing automation to an existing facility may seem to be a daunting task as there is a perception that it could involve many suppliers delivering the varied aspects of the project. However, engaging with one source that is capable of

delivering integrated solutions from numerous brands, each with their own specialist knowledge and products for logistics, can significantly simplify project delivery.

Logistics operations are integral to all manufacturing processes enabling finished products to be shipped to customers; from individual packaging to palletizing and onward delivery, speed and reliability are key to an efficient process. Central to achieving a high level of automation is integrating the individual components tailored to the application.

Regal Rexnord combines a range of brands, each with their own expertise, enabling customers to specify complete logistics solutions tailored for their particular application. An experienced team of logistics engineers can design a system with the capacity, speed and efficiency expected in today's demanding market. Providing modular systems that integrate seamlessly to deliver a turnkey solution, Regal Rexnord is unlocking the performance and reliability that is required for tomorrow's logistics operations.

Regal Rexnord showcased its Modsort range of modular transfer and divert stations including a new, large format version as well as a RCS1540 curve system for logistics applications at LogiMAT 2025 Stuttgart. Visitors saw these innovative solutions in action and met with experts on the Regal Rexnord stand at the Stuttgart Trade Fair Centre, Germany.

Image captions:

Image 1: Automated conveyor and sortation systems streamline the last mile of logistics by enabling faster, safer, and more efficient package handling.

About Regal Rexnord

Regal Rexnord Corporation is a global leader in the engineering and manufacturing of automation sub-systems, industrial powertrain solutions, automation and power transmission components, electric motors and electronic controls, air moving products, and specialty electrical components and systems, serving customers around the world. Through longstanding technology leadership and an intentional focus on producing more energy-efficient products and systems, Regal Rexnord helps create a better tomorrow – for its customers and for the planet.

Following the acquisition of Altra, and commencing with its 1Q 2023 earnings release, Regal Rexnord will report under four operating segments: Industrial Powertrain Solutions, Power Efficiency Solutions, Automation & Motion Control and Industrial Systems. Regal Rexnord is headquartered in Beloit, Wisconsin and has manufacturing, sales, and service facilities worldwide.

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