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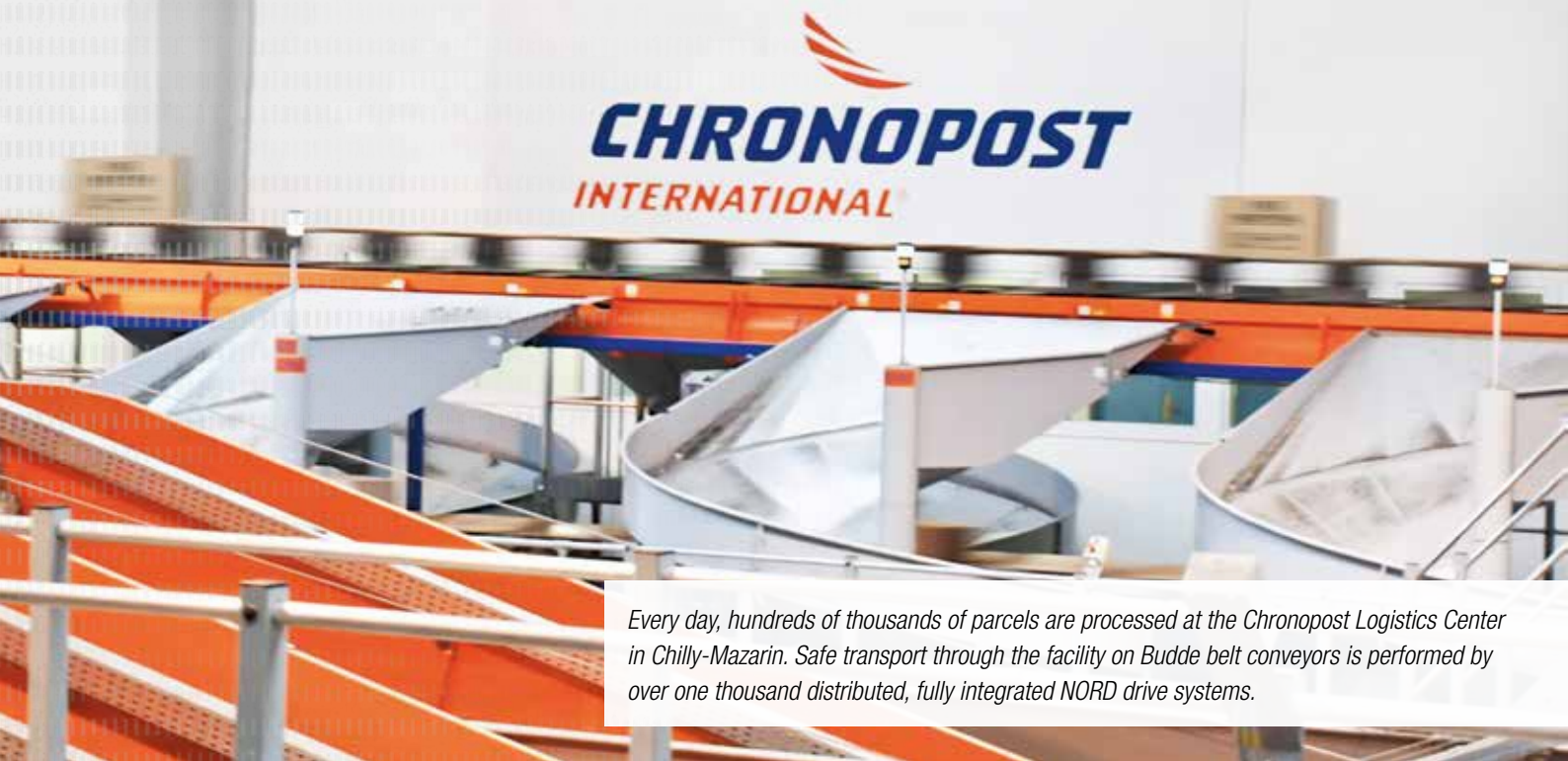


Plug-and-Play Systems
Provide Easy Field Maintenance
and Lower Costs

Drive Solutions for Parcel Logistics

Case study: Chronopost





Every day, hundreds of thousands of parcels are processed at the Chronopost Logistics Center in Chilly-Mazarin. Safe transport through the facility on Budde belt conveyors is performed by over one thousand distributed, fully integrated NORD drive systems.



Logistics center
Belt conveyor



Geared motors
Helical bevel and worm geared motors



AC Vector drives
Motor-mounted variable frequency drives

Project challenge

The French postal company Chronopost operates one of the world's largest parcel logistics centers in Chilly-Mazarin, France, which is near Paris. On average, 450 trucks line up at the facility every day; more than 200,000 parcels must be routed to the correct loading dock that serves the packages' destination. Traffic peaks during the weeks before Christmas, where on some days, more than 300,000 parcels make their way through the distribution center.

Multi-branch conveying lines – This distribution center has more than 100 docks where parcels are loaded and unloaded. The two-story complex consists of two fully-automated sorting systems. Each system extends over several hundred meters. Incoming shipments are placed onto belt conveyors and are promptly registered by digital cameras

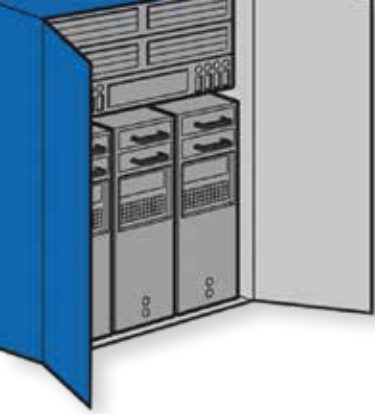
capable of scanning bar codes on any one of the five visible package sides. Every package arrives at the correct loading dock within three minutes.

Simple handling required – The extensive belt conveyor system was both designed and installed by Budde Fördertechnik GmbH. For a system that was already extremely complex, Budde and Chronopost sought to find a drive solution featuring particularly easy wiring, commissioning, and maintenance. Maximum reliability was also an important factor in order to minimize malfunctions and downtimes for this very busy distribution center. Finally, in light of the great number of drive units required for this vast facility, there was a clear preference for a compact solution – and, of course, for a highly efficient system that was designed to optimize operating costs.



Focus on the customer

Serving customers around the world, Budde Fördertechnik GmbH supplies conveying systems designed to transport piece goods as well as bulk materials. The company develops, engineers, services, and retrofits standard components such as rollers, telescopic conveyors, and belt conveyors. In addition, Budde can implement completely specialized logistics solutions based on a portfolio of modular, scalable system designs. Three plants in Germany employ approximately 200 staff altogether.



User benefits of distributed, integrated drive systems

- ▶ Very little wiring required
- ▶ Improved EMC characteristics
- ▶ No need for shielded motor cables
- ▶ Smaller, cooler cabinets

“NORD’s solution reduces installation space and wiring requirements, which also makes mistakes less likely.”

Eric Fouquet, Chronopost maintenance and repair manager

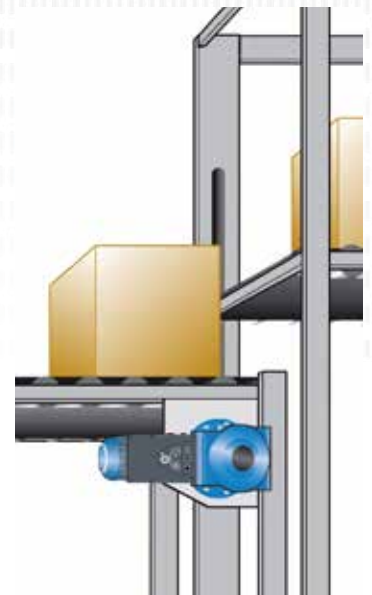
Application solution

Budde’s belt conveyors are paired with 1,100 NORD geared motors featuring both helical bevel and helical worm gear units. With heavy use and considerable stress, these highly efficient drives ensure low maintenance requirements as well as a long service life thanks to their durable, wear-resistant gear teeth. They are combined with motors specifically designed to handle overloads: this limits the scope of system variants that are needed in this application, despite the overall number of drives required.

Plug-and-play principle – Chronopost’s sophisticated tracking requirements call for very precise control and synchronization. Each drive features an integrated variable frequency drive in an IP66 enclosure mounted to the top of the motor’s terminal box. These variable frequency drives are

pluggable – if needed, they can be very easily swapped for another unit. All pre-wired combinations of NORD gear units and variable frequency drives allow for convenient installation and commissioning.

Tough and smart – Featuring up to 400% starting torque and a typical overload capacity of 200% for 5 seconds, these drive systems are very robust. Plus, they deliver intelligent performance: these variable frequency drives communicate via PROFIBUS DP with a PLC, which passes data on to the main control system. If a backlog occurs at a specific loading ramp, the conveyor line can be adjusted in the appropriate area, with the belt acting as a parcel buffer until the situation is resolved. This is a very effective measure to prevent a major shutdown.



Networkers

Integrated NORD drives support various fieldbus and Industrial Ethernet systems.



Focus on the project

Chronopost’s logistics center south of Paris is one of the top-performing parcel distribution hubs in all of Europe:

- ▶ Up to 30,000 parcels can be processed per hour
- ▶ Around 60% of Chronopost’s packages delivered in France pass through this facility
- ▶ Budde’s belt conveyor system is equipped with about 1,100 fully integrated NORD drives