

# DRIVE SYSTEMS FOR PARCEL LOGISTICS

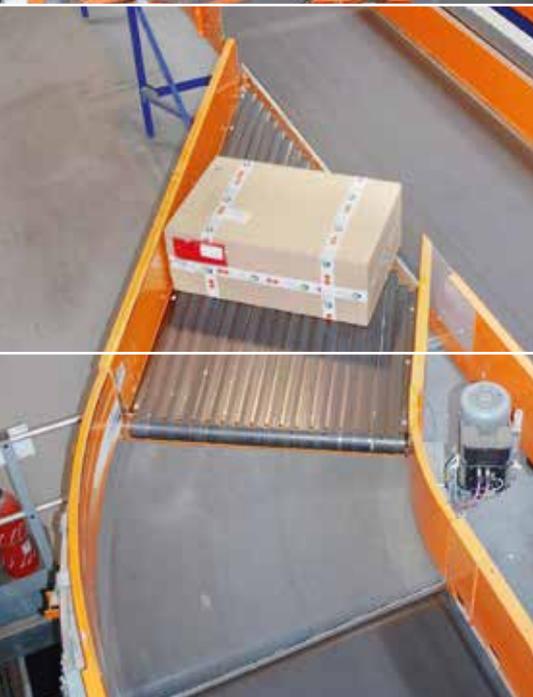
CASE STUDY: CHRONOPOST



**A thousand helping hands  
along conveyor lines.**



**Smooth flow of operation  
due to smart control.**



**Manageable range  
of drive types.**



**Plug & play systems for  
comfortable connections.**

**Mechatronic  
drive units.**

*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 ensured by over a thousand distributed, fully integrated NORD drive systems.*



**LOGISTICS CENTER**  
Belt conveyors



**GEARED MOTORS**  
Helical bevel and worm geared motors



**FREQUENCY INVERTERS**  
Motor-mounted frequency inverters

## PROJECT CHALLENGE

The French postal services provider Chronopost operates one of the world's largest parcel logistics centers in Chilly-Mazarin near Paris. On average, 450 trucks call at the facility per day; more than 200,000 parcels must be routed to the loading ramps that serve their destinations. Traffic peaks in the weeks before Christmas, when on some days about 300,000 parcels make their way through the center.

**Multi-branch conveying lines.** – This distribution hub has more than 100 ramps where parcels are taken in and out. The two-storey complex comprises two fully automated sorting systems, each of which extends over several hundred meters. Incoming shipments are put on belt conveyors. They are promptly registered by digital cameras capable of scanning bar codes on any one the five visible parcel sides. Every

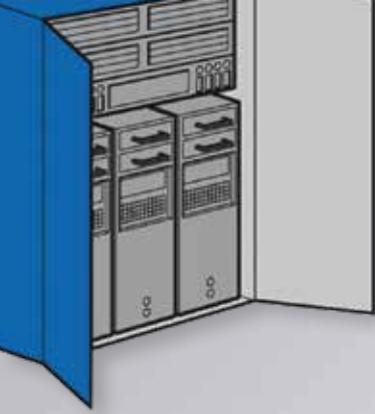
parcel arrives at the right ramp for onward delivery within a span of less than three minutes.

**Simple handling required.** – The extensive belt conveyor system was designed and installed by Budde Fördertechnik GmbH. For a system that was complex enough as is, Budde and Chronopost sought to find a drive solution featuring particularly easy wiring, commissioning, and maintenance. Maximum reliability was also called for in order to minimize malfunctions and downtimes of 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 compact constructions – and, of course, for highly efficient systems 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 or telescopic and belt conveyors. In addition, Budde can implement completely customized logistics solutions based on a portfolio of modular, scalable system designs. Three plants in Germany employ some 200 staff altogether.





## USER BENEFITS OF DISTRIBUTED, INTEGRATED DRIVE SYSTEMS

- much less wiring required
- improved EMC characteristics
- no need for shielded motor cables
- smaller and cooler cabinets

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

**Eric Fouquet, Chronopost  
Maintenance and Repair Manager**

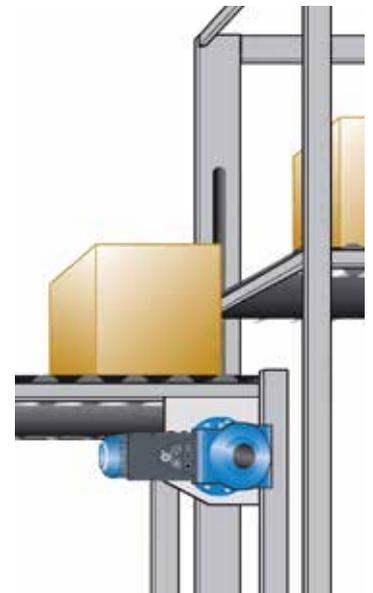
## APPLICATION SOLUTION

Budde’s belt conveyors are fitted with 1,100 efficient NORD geared motors featuring helical bevel gears or worm gears. Heavy use and considerable stress notwithstanding, these highly efficient gears ensure low maintenance requirements and a long service life thanks to their extremely durable, wear-resistant gear teeth. They are combined with motors explicitly designed to handle overloads: this limits the scope of system variants that are needed in this application to a manageable few, despite the great overall number of required drives.

**Plug-and-play principle.** – Chronopost’s sophisticated tracking and tracing requirements call for very precise control and synchronization. Each drive system therefore features an integrated frequency inverter in an IP66 enclosure mounted on top of the motor terminal box. These

inverters are pluggable – if need be, they can be very easily swapped out. All pre-wired combinations of NORD geared motors and frequency inverters allow for very comfortable installation and commissioning.

**Hard 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: the inverters 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 slowed in this section, 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 here per hour.
- Around 60 % of Chronopost’s national parcel post in France passes through this facility.
- Budde’s belt conveyor system is equipped with about 1,100 fully integrated NORD drives.



## OTHER NORD APPLICATIONS YOU MAY FIND INTERESTING INCLUDE:

- Belt conveyors
- Tunnel conveyors
- Airport baggage handling
- More: [www.nord.com/references](http://www.nord.com/references)



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