

DRIVE SYSTEMS FOR THE CHOCOLATE INDUSTRY

CASE STUDY: ZOTTER



Fair-trade Organic Chocolates

Meeting the highest standards



Reliable Drives

Keeping production moving



Applications Covered

Conveying, pumping, mixing, compressing



Parallel Shaft Gear Drives

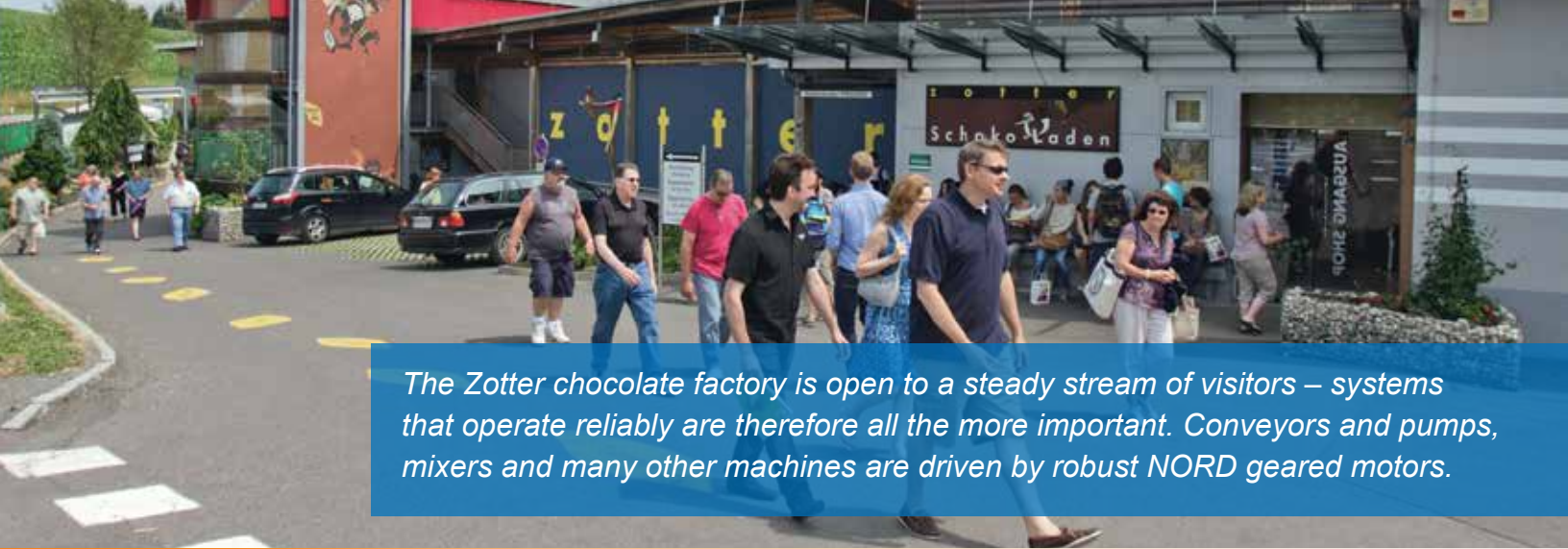
Driving the conche with CLINCHER™ units



Helical In-Line Gear Drives

Driving pumps





The Zotter chocolate factory is open to a steady stream of visitors – systems that operate reliably are therefore all the more important. Conveyors and pumps, mixers and many other machines are driven by robust NORD geared motors.

PROJECT CHALLENGE



Food Industry
Chocolate production



Geared Motors
CLINCHER™ - Parallel shaft gear units



APPLICATION VIDEO

Many steps are involved in the process to make chocolate from cocoa beans. Many ingredients and mixtures in various states must remain in near-continuous motion for hours and days on end. These processes require reliable drive systems. In Zotter Schokoladen's factory in the southern area of Austria, the durability and fail-safe operation of these drives is doubly significant. First, smooth operation ensures the premium quality of the final product. Visitors are also observing the production facility every day and obviously should not experience any malfunctions.

Reliability under public scrutiny – The Zotter plant has up to 3,000 visitors per day, which amounts to hundreds of thousands of eyewitnesses every year. Strolling through the factory on a walkway high above the production facilities, they have an birds eye view of roasters and crushers, scales

and mixers, rollers and conches. The production floor is therefore also a showroom where no system should ever come to an unexpected standstill.

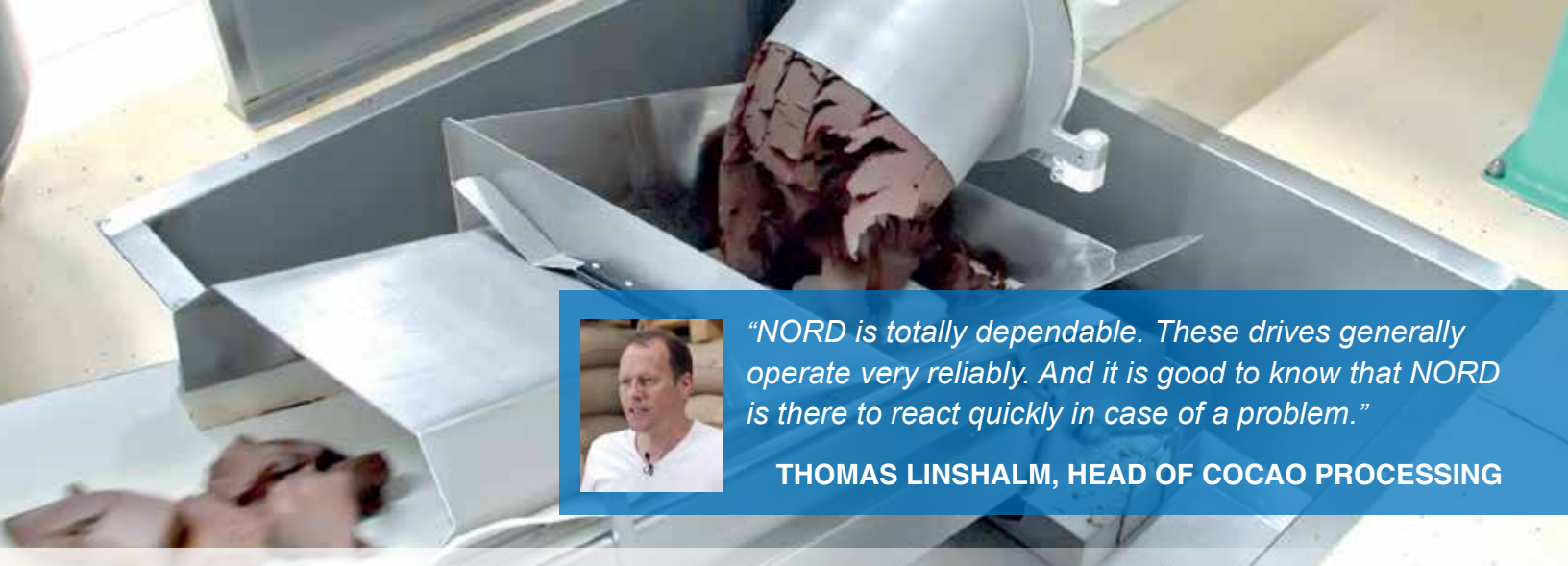
Resilient and trouble-free – Transforming beans into the finished product involves a series of grinding, mixing, agitating, conveying, pumping, filling, and evacuation processes. Drive loads and diverse modes of operation are varied for this wide range of tasks, but reliable drive technology is imperative in each and every one of them to ensure the smooth operation of all machinery. While drive reliability was paramount, gearmotors were also to be sourced from a manufacturer capable of resolving any problems on location swiftly and effectively.

FOCUS ON THE CUSTOMER



The range of ingredients for Zotter bars includes asparagus as well as vodka, celery as well as cheeses, lime, lavender, and a plethora of even more exotic flavors. At any time, 365 varieties to choose from are available. Still, chocolate remains an indispensable component for most of this versatile product range. Zotter is one of very few manufacturers in Europe with an in-house chocolate production – and the only one to exclusively use fair-trade organic ingredients.





“NORD is totally dependable. These drives generally operate very reliably. And it is good to know that NORD is there to react quickly in case of a problem.”

THOMAS LINSHALM, HEAD OF COCAO PROCESSING

APPLICATION SOLUTION

In Zotter’s chocolate production facility, machines and systems for various tasks are driven by a variety of different gearmotors from NORD DRIVESYSTEMS. For instance, NORD conveyor drives transport beans between the cleaning, roasting, and sterilizing stations. A little further along, a grinder with a NORD drive turns de-shelled nibs into liquid cocoa paste. Pumps with NORD drives pipe that paste to a mixer, where sugar and other ingredients are then added.

Innovative gear construction – The pourable mass is then ground in a rolling machine in order to achieve a fine texture. During this part of the process, a screw compressor is driven by a NORDBLOC.1 helical In-line gearmotor. In these systems, gears can be mounted through the bearing bores: while the axis-to-axis distance is the same as in conventional helical gearing, the NORDBLOC.1 design allows for using

larger bearings in an overlapping offset configuration. The shafts are also larger and stronger than in other comparable units on the market. Thanks to the larger bearings, NORDBLOC.1 systems are exceptionally strong and durable, since excessive wear due to radial and axial forces is minimized due to the oversized bearings.

Drives for all parts of the process –

A series of conveyor drives then transport the solidified intermediate product through five rolling machines, where it is gradually refined. During the final stages of the chocolate production process, NORD drives again serve various conveying, mixing, and pumping systems, including those for the filling and evacuation of material from the conche.



Versatile –
NORD geared motors drive agitators, mixers, grinders, pumps, and conveying systems.

FOCUS ON THE PROJECT

The Zotter chocolate production floor was devised and equipped by Bühler, the Swiss process engineering specialist. Gearmotors from NORD DRIVESYSTEMS help ensure smooth operation throughout all parts of the process including:

- grinding, agitating, and mixing of ingredients and products
- conveying of solids and pumping of liquids
- filling, compression and evacuation



**MORE REFERENCES AND
CASE STUDIES MAY BE FOUND AT :**

▪ www.nord.com/references



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