



Further references and application cases:  
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Reliable drives  
for chocolate production

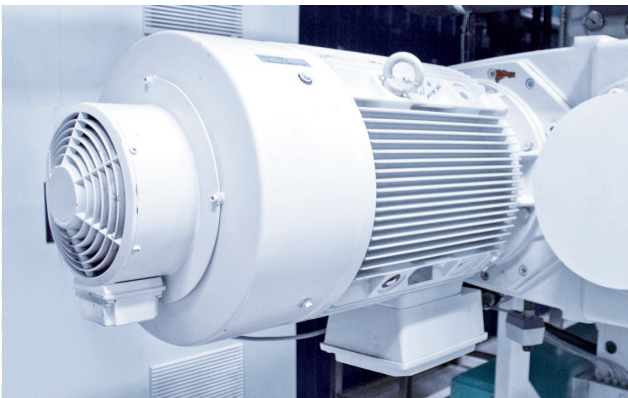
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Conveying, pumping,  
mixing, compressing

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NORD parallel shaft geared  
motor drives the conche

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# Drive solutions for the Chocolate Industry

Case study: Zotter

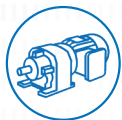




The Zotter chocolate factory is open to a steady stream of visitors – systems that operate reliably are therefore all the more important. Conveyors and pumps, mixers and many other machines are driven by robust NORD geared motors.



**Food industry**  
Chocolate production



**Geared motors**



**Application video**

*"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 cocoa processing

### Project requirements

Many steps are necessary to make chocolate from cocoa beans. 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 south of Austria, the durability and fail-safe operation of these drives is doubly significant. First of all, smooth operation ensures the premium quality of the final product. Also, visitors observing the production process are present 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 gallery high above the production facilities, they have an excellent view of roasters and crushers, scales and

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

**Resilient and trouble-free.** – Turning beans into the finished product involves a series of grinding, mixing, agitating, conveying, pumping, filling, and evacuation processes. Drive loads and applicable modes of operation vary widely for these diverse tasks, but robust drive technology is imperative in every one of them to ensure the smooth operation of all machinery. While drive reliability was therefore paramount, geared motors were also to be sourced from a manufacturer capable of resolving any problems on location swiftly and effectively



### Customer profile

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 on offer. Still, chocolate remains an indispensable component for most of this versatile product range. Zotter is one of very few manufacturers in Europe with an inhouse chocolate production – and the only one to use only fair-trade organic ingredients.





## Application solution

Everywhere in Zotter's chocolate production facility, machines and systems for various tasks are driven by a range of different geared motors 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 deshelled nibs into liquid cocoa paste. Pumps with NORD drives pipe that paste to a mixer, where sugar and other ingredients are added.

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

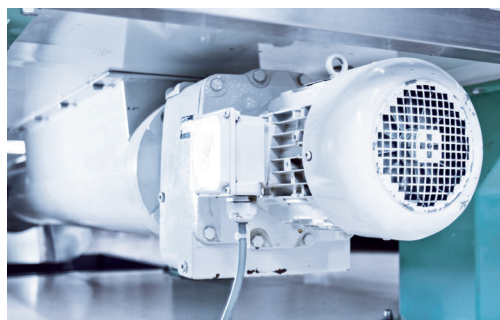
for using larger bearings in an overlapping offset configuration. The shafts are also larger than in other units on the market machined from a single block. Thanks to the larger bearings, NORDBLOC.1 systems are exceptionally strong and durable, since wear due to radial and axial forces is further minimized.

**Drives for all parts of the process.** – Conveyor drives then transport the solidified intermediate product through five rolling machines, where it is gradually refined. In the final stages of chocolate production, NORD drives again serve various conveying, mixing, and pumping systems, including those for the filling and evacuation of the conche.



### Versatile

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



## The project at a glance

The Zotter chocolate production floor was devised and equipped by Bühler, the Swiss process engineering specialist. Geared motors 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.