

# DRIVE SOLUTIONS FOR CUTTING TECHNOLOGY

CASE STUDY: TREIF



**Efficient & Precise**  
Food Processing



**Easy Handling**  
Increased Production



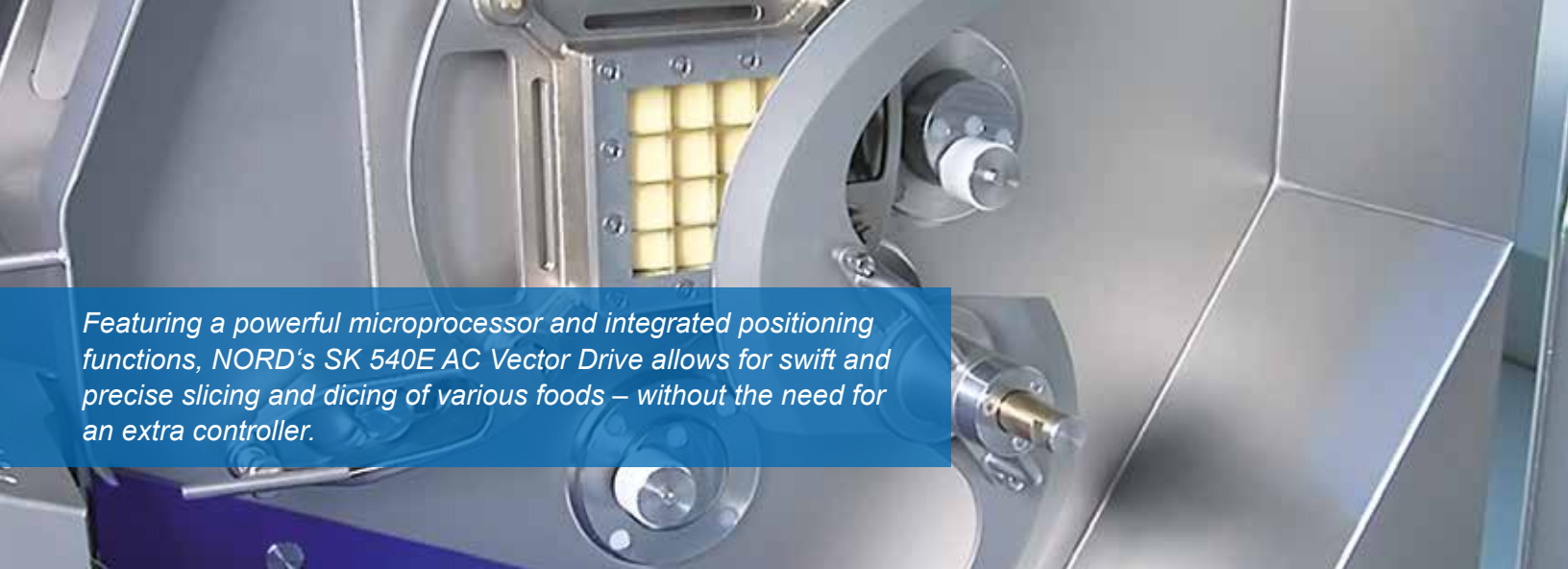
**Thinly Sliced**  
Stacked High



**SK 540E AC Vector Drive**  
With PLC Functionality



**NORD FLEXBLOC™**  
Universal Worm Gear Drive



Featuring a powerful microprocessor and integrated positioning functions, NORD's SK 540E AC Vector Drive allows for swift and precise slicing and dicing of various foods – without the need for an extra controller.



**Food Industry**  
Cutting Machines



**AC Vector Drives**  
SK 540E



**Gear Drives**  
NORD FLEXBLOC™  
Worm Gearmotors

## PROJECT CHALLENGE

Treif, known globally as Treif Maschinenbau GmbH, manufactures machine equipment for dicing, strip cutting, grating, portion cutting, slicers and bread cutting. Until recently, most of these machines still relied on conventional relays and circuit breakers instead of modern, flexible, drive electronics that would feature much more functionality. When NORD introduced an AC vector drive featuring PLC capabilities, Treif found this to be an economically viable new control solution with enough built-in intelligence to allow for programming of drive-related functions. As the “brain” of several new Treif machines, this AC drive now ensures improved functions, an increased ease of handling, and optimized productivity.

### Proven quality

In addition to the scope of functions and an attractive price, the proven reliability of NORD drive solutions was an equally essential value.

Treif's customers around the world are spread across many countries, including remote and hard-to-service areas.

The proven durability of the SK 500E AC drive series was a crucial factor in choosing the SK 540E for Treif machines. As a current customer with hands-on experience with NORD products, Treif's trust with the NORD group provided confidence in the decision to move away from relays and circuit breakers.

### Conversion of a wide range of machines

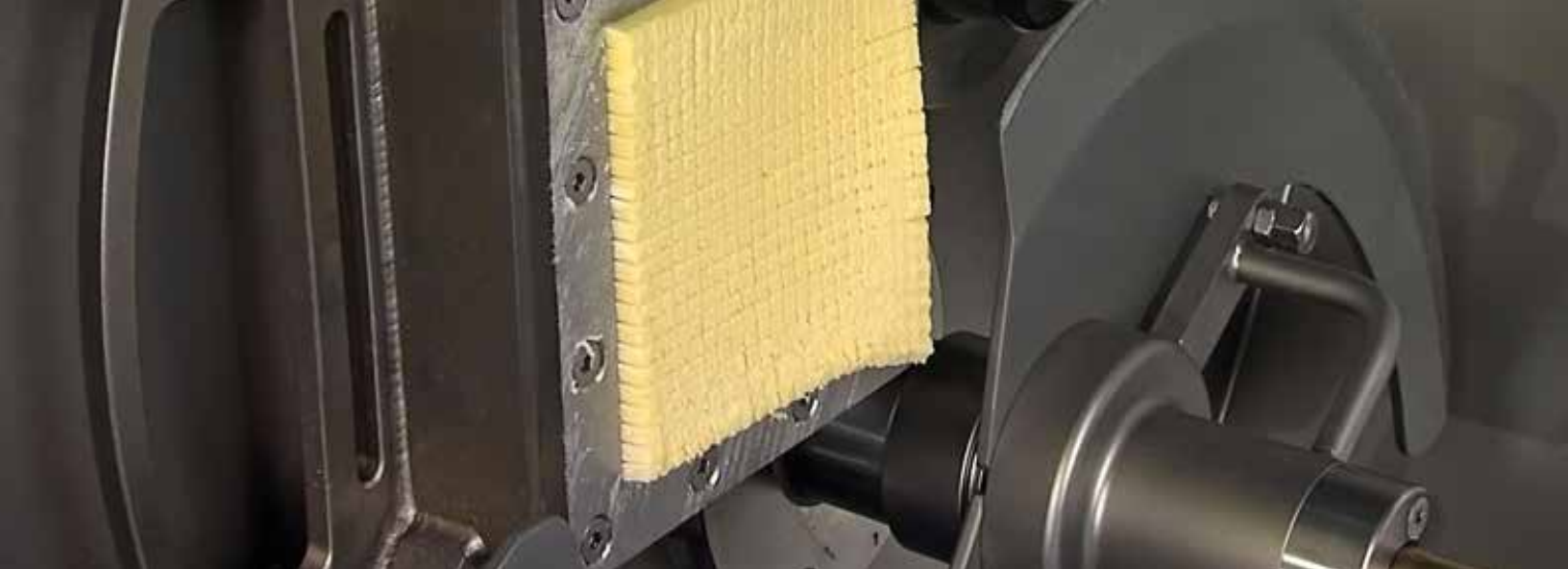
The new drive solution is being rolled out across several machines in Treif's portfolio. Two machines (CASEUS basic and FLEXON) mainly used for meat, sausage, and cheese slicing and dicing are the first to pioneer this modern technology.

## FOCUS ON THE CUSTOMER



Based in Oberlahr, Germany, Treif Maschinenbau GmbH is one of the world's leading manufacturers of food cutting machines, and systems. Their varied product range addresses the needs of a wide range of users. From small businesses, such as butcher shops, to large scale catering establishments, industrial food production and processing facilities, Treif cutting technology is utilized in over 150 countries.





## APPLICATION SOLUTION

The central control unit of every machine is an intelligent SK 540E AC vector drive, whose integrated PLC operates with a cycle time of 10 milliseconds. While it handles the control buttons and status displays connected to it, the AC drive's key task is to provide control for the machine's hydraulic system. This system integrates a hydraulic ram, which ensures that pressure is always precisely adjusted for the type of food in the machine. This helps achieve the best possible cutting results.

### Easy to use and safe by design

The intelligent AC drive used in Treif cutting machines comes with all of the proven basic characteristics of the SK 500E product family, and includes:

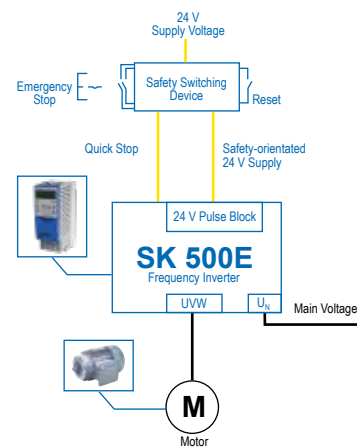
- Sensorless current vector control,
- Automatic parameter identification of the connected motor
- "Safe Stop" safety function.

### Highly versatile

The SK 540E is designed to take control in complex and dynamic drive scenarios.

Special features include:

- A new universal encoder interface
- Asynchronous and synchronous motor control capability
- Programmability of drive-related functions according to the IEC 61131 Standard



**Accident Prevention**  
*"Safe pulse block" rules out a motor restart when a cover or door is opened.*

## FOCUS ON THE PROJECT

Allowing for the programming of drive-related functions according to the IEC 61131 standard, an AC Vector Drive for cutting machines ensures that a wide range of food can be sliced and diced.

- More flexible than a circuit breaker based solution
- Precise, easy to use and reliable
- No additional cost for another controller



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

- [www.nord.com/references](http://www.nord.com/references)



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### Global Vision, Local Support

NORD makes its wide product range easily available through a global network that includes representation in over 60 countries. By providing all of our customers with prompt delivery, and expert support services, we are firmly committed to exceeding customer expectations and being responsive to the ideas and specifications of every customer, anywhere in the world.