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DRIVE SYSTEMS FOR CUTTING TECHNOLOGY

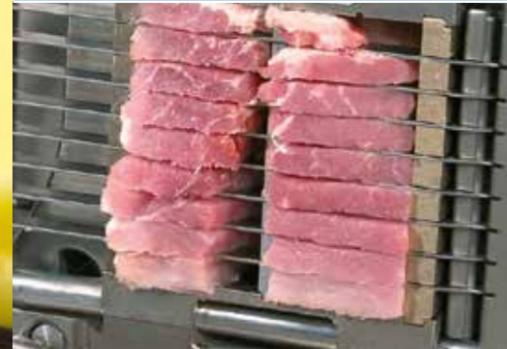
CASE STUDY: TREIF



**Efficient and 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**

NORD DRIVESYSTEMS Group

- Family business from Bargteheide near Hamburg with 4,000 employees
- Drive solutions for more than 100 branches of industry
- 7 production locations worldwide
- Present in 98 countries on 5 continents
- More information: www.nord.com

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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 foodstuffs – without need for an extra controller.

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, exible, drive electronics that would feature much more functionality. When NORD DRIVESYSTEMS 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.

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.

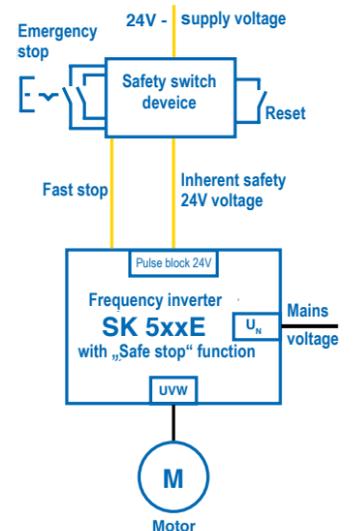
While it handles the control buttons and status displays connected to it, the AC drives key task is to provide control for the machine's hydraulic system. This system integrates a hydraulic ram, which ensures that pressure is always precisely adjusted for the type of food in the machine. This helps achieve 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, and
- the “Safe Stop” safety function.

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

- a new universal encoder interface,
- asynchronous as well as synchronous motor control capability, and especially
- 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.



FOOD INDUSTRY
Cutting machines



AC VECTOR DRIVES
SK 540E



GEAR DRIVES
NORD FLEXBLOC™
Worm gear motors

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.



FOCUS ON THE PROJECT

Allowing for free programming of drive-related functions according to the IEC 61131 standard, a frequency inverter for cutting machines ensures that foodstuffs can be sliced and diced:

- in more flexible ways than in circuit breaker based solutions,
- precisely, easy to use and reliably,
- no additional cost for another controller.

