



ENGINEERING  
TOMORROW



Case story | VLT® AutomationDrive FC 302

## Small but **mighty efficient**

### **The situation**

Leading Bavarian company Hans Weber Maschinenfabrik GmbH (WEBER) has developed sanding, grinding and extruder machines for almost 100 years.

The manufacturer was looking for drives that could optimize the efficiency of its grinding machines, whilst maintaining the renowned high-quality finish given to every product, be it metal or wood.

But with limited space in the machine control cabinets, WEBER needed a small solution that could deliver big benefits...

**...and the compact Danfoss  
VLT® AutomationDrive FC 302 was the perfect fit.**

Compact VLT® drives  
improve energy  
efficiency by

**15%**

## The challenge

WEBER needed drives that could fulfill standard applications, whilst delivering consistent performance and productivity.

A wide variety of motor technologies are installed in the grinding machines, from induction to permanent magnet motors, all operated by the same type of drive.

The motors must produce as little vibration and noise as possible to reduce the negative effects on the micrograph and acoustics.

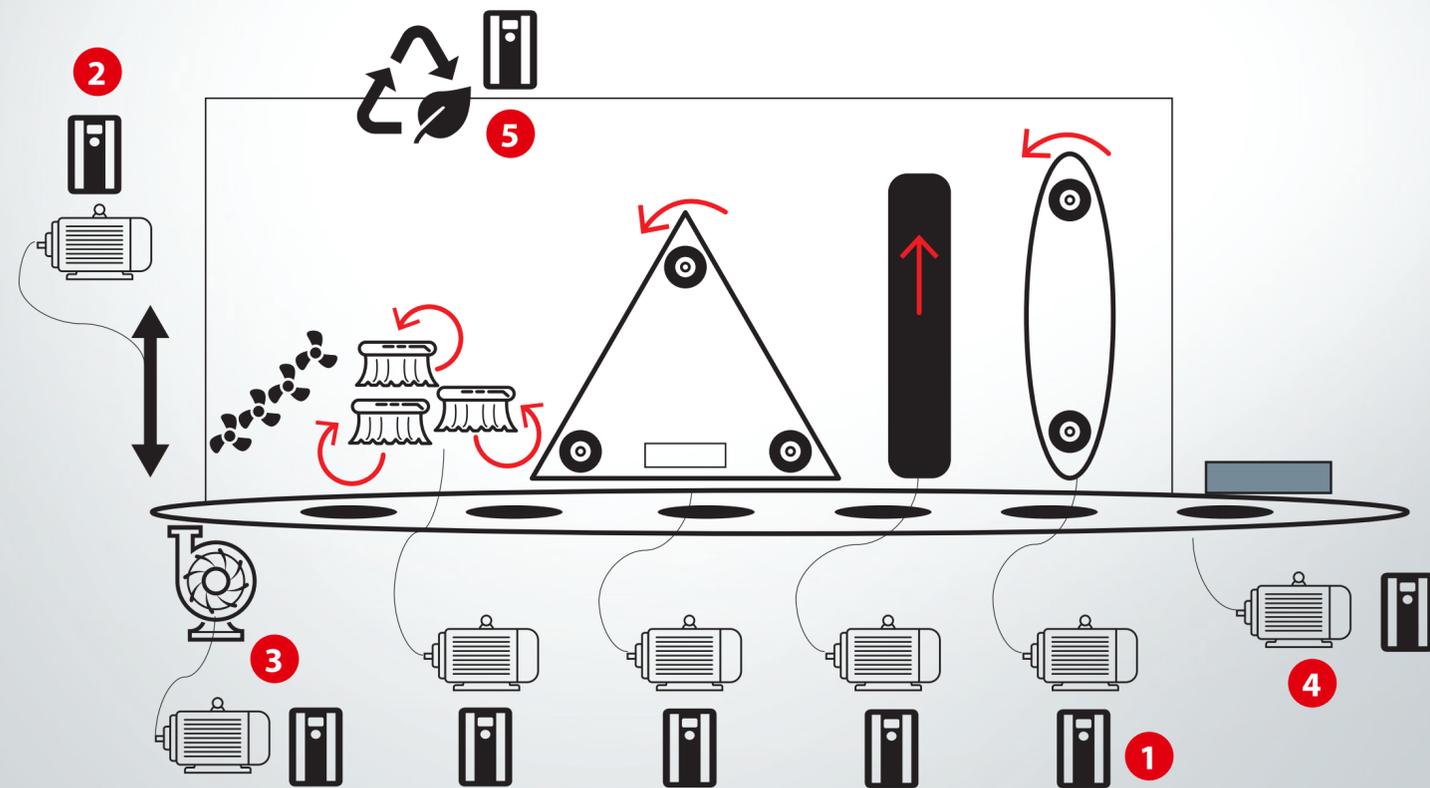
Grinding units also need to work with the greatest speed, accuracy and stability to ensure precision on the grinding surface. If the workpiece runs into the machine, the speed drops during grinding. WEBER therefore needed drives that could keep the motor at a constant speed to achieve an optimal grinding pattern.

**“We have worked with Danfoss for a long time and the cooperation has always gone well. They know their way around our products and they know us. They understood exactly what we needed and we received drives that were perfectly suited to our requirements.”**

**Stefan Fischer,**

Head of Electrical Design at WEBER





## The solution

Up to 13 Danfoss VLT® drives were installed to meet the application-specific requirements of different parts within the grinding machines.

### 1 Sanding unit

Each sanding unit is driven individually. The drive controls the speed of the grinding belts and brushes, while communicating with the machine control cabinet via PROFINET.

### 2 Position controller

The frame height of the grinding machine is adjustable so that it can be adapted to different workpiece product thicknesses. The position controller implemented in the machine currently controls the drive. However, using Integrated Motion Controller functionality available within the VLT® AutomationDrive FC 302, the drive can process the position cycles independently. No external position controller is required.

### 3 Vacuum table

A Danfoss drive is located within the vacuum table, which uses suction to hold the product in place on the conveyor belt to guarantee maximum precision and safety during the grinding process.

### 4 Conveyor belt

A feed motor drives the circulating conveyor belt, while a Danfoss drive ensures minimal speed fluctuations when different product loads travel through the machine.

### 5 Eco Drive system

Hans Weber utilizes Eco Drive technology, where the Danfoss drives automatically recognize the load on the respective unit and regulate the optimal range of action. This reduces losses in the drive system and enables energy savings of around 15%.

## The outcome

The Danfoss VLT® AutomationDrive FC 302 offers the ideal compact solution, as it does not require any additional electrical components, electromagnetic compatibility filters or chokes, ensuring all available space in the control cabinet is maximized.

Each grinding machine at the WEBER site was equipped with Danfoss VLT® drives in outputs ranging between 0.75 and 160 kW.

Thanks to its high level of flexibility, the Danfoss VLT® AutomationDrive FC 302 can serve all required applications, regardless of the motor technology used.

Since installing the drives, WEBER has improved its ECO Drive system, which enables the machines to use energy and resources much more efficiently.

WEBER also benefits from DrivePro® Remote Expert Support, a maintenance service that provides easy, fast and secure access to all drives. In the event of an error, Danfoss can support customers around the world.

**Danfoss is committed to providing the highest levels of customer service. A permanent support team made up of application engineers, service technicians, salespeople and back-office employees is available to ensure WEBER machines stay up and running at all times.**

**“The Danfoss VLT® AutomationDrive FC 302 supports our high-precision grinding machines but most importantly it enables us to reduce energy consumption and operating costs.”**

**Stefan Fischer,**

Head of Electrical Design at WEBER

**Flexibility**  
to serve all  
applications

*Images: Hans Weber Maschinenfabrik GmbH*

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