



# KNOLL Maschinenbau

keeps enclosure design and manufacturing flowing smoothly

## Recovering and recycling metal processing industry's by-products

KNOLL Maschinenbau GmbH of Bad Saulgau in southeastern Germany is a leading manufacturer in the highly specialized field of recycling metal chips and cooling lubricants from equipment employed in machining shops. The chips are reused as raw material and the lubricants are filtered and reused to the greatest extent possible. This medium-size business with 750 employees provides a comprehensive range of conveying and filter systems, and sells to a Who's Who of companies involved in machine-tooling. KNOLL relies on EPLAN Cabinet for efficient enclosure design and manufacturing thanks to the software's capability to allow consistent data flow into wire processing and NC machines.

**efficient engineering.**

“KNOLL can deliver a compact, machine-mounted system or a behemoth like the central filtering system it developed for a German automobile transmission plant of ZF Friedrichshafen that recycles the cooling lubricant of 50 machines – with a 160,000-liter reservoir capacity and a throughput rate of 14,000 liters/minute.”

# Applying control technology

# to SAVE ENERGY



One defining characteristic of KNOLL's bigger systems is the large enclosures that house the main functions of supply, cleaning and temperature control. Control technology is playing an increasingly important role in achieving greater energy efficiency in KNOLL's large recovery systems. "The delivery pumps usually are rotary speed-controlled while the filtering systems operate on an as-needed basis, automatically adjusting to changing process conditions such as volume flow rate, material and the amount and size of particles," says Anton Forstehäusler, head of electrical design at KNOLL. With these and other energy saving features, a high-performance cooling lubricant filtering system will use up to 60,000 kWh less energy per year, enough to illuminate the Eiffel Tower from top to bottom for six nights.

## Designing enclosures with a state-of-the-art CAE tool

KNOLL's designers have been using the EPLAN Cabinet software for 3D panel layouts for about a year. This tool effectively supports the complete product development phase in enclosure manufacturing and contributes to reduced project turnaround times. Using schematics as the starting point, EPLAN Cabinet positions all components precisely in the enclosure while the integrated collision control feature takes minimum clearances into consideration.

## Electronically transferring data to set up wire and enclosure manufacturing

"Panel layout has become much simpler," says Anton Forstehäusler. "All a designer has to do is drag and drop the component where he wants it mounted." EPLAN Cabinet even automatically determines the wire lengths. Once the enclosure is laid out, Cabinet transmits the data to production, or more specifically, one set of data to wire processing and a second set to the enclosure machining unit that cuts the sheet metal accordingly. Prior to implementing Cabinet, the company enjoyed this capability only for the wire processing setup thanks to a third-party interface, but the 3D wire routing module in EPLAN Cabinet now supports data transfer to both processes. "This was a logical step since our aim is to process all electrical engineering tasks with a single system and no third party interfaces," says Anton Forstehäusler.

## Inspiring process improvement along the way

Much of the work of manually inserting component data into the design has been eliminated by using Cabinet. The process is so efficient that KNOLL is doing 90% of projects in EPLAN. The software's capabilities also led to an important review of how some projects are done. In the past, if there were deviations from the design, they were initiated on the shop floor during production, but not always

## Data and documentation integrity boosts **QUALITY**

properly documented. Now the manufacturing personnel sends the changes to the designers who incorporate them directly into the EPLAN project so the amended design can be reproduced. Achieving a consistent level of quality KNOLL's customers expect was more than enough to convince manufacturing to adopt this process.

### Benefiting from documentation scope and quality

KNOLL's designers also appreciate that the collision control feature of EPLAN Cabinet ensures that components in the enclosure door fit optimally and that the required minimum clearances are always respected. Furthermore, they like the quality of the documentation EPLAN can generate: schematics, drawings, bills of materials and terminal diagrams are all included in the complete documentation set along with a quotation, if needed. Moreover, any of these can be reproduced almost instantly in one of many available languages, saving further time and improving communication with customers and suppliers. KNOLL has decided to continue to work towards centralized data usage and will soon also be using EPLAN data for preliminary calculations. Pricing for components is already being included in the bills of materials.

### Migrating to EPLAN Electric P8 for greater data continuity

The next major step toward integrating data use across the company is underway: KNOLL is migrating from EPLAN 5 to EPLAN Electric P8, EPLAN's flagship electrical design software with its own powerful database, the EPLAN Platform. KNOLL's Cabinet program will be linked to that database so the entire electrical engineering design group can share data that can be archived as is or combined into larger macros, or modules to be inserted in seconds into projects for even greater time saving and accuracy. Using existing modules creates a uniform look in the enclosure and a high level of quality. The EPLAN Platform will also be linked to the company's enterprise system for sharing data with other departments.

“The EPLAN Platform allows all participating colleagues to use current data, without uncertainties or delay,” says Anton Forstehäusler, adding “Departments including engineering, purchasing, manufacturing, product management and assembly will all benefit.”

Faster, more consistent enclosure design  
with EPLAN Cabinet

# SUMMARY

KNOLL Maschinenbau GmbH, a leading manufacturer of conveying and filter systems for metal working, relies on EPLAN Cabinet for planning enclosure manufacturing, profiting from consistent data flows with reduced development times. Productivity has also been enhanced by employing Cabinet's direct interface capability to transfer data electronically to set up the company's wire processing and NC machines for efficient manufacturing of enclosures and preparing the wires that go in them. With the pending upgrade from EPLAN 5 to the database-driven EPLAN Electric P8, designers soon will be able to access macros and modules stored on the EPLAN Electric P8 database and available to both Electric P8 and Cabinet users, further reducing project development times.

Find out more about KNOLL on [www.knoll-mb.com](http://www.knoll-mb.com)

*efficient engineering.*

