

## Machinery and industrial products

# Leutenegger + Frei

Two highly successful fields of endeavor – one PLM environment

### Products

Solid Edge, Teamcenter

### Business challenges

Innovate across product lines

Standardize and re-use data

Shorten time-to-market

Develop individual installations efficiently

Meet high requirements for design and functionality

Comply with standards and comprehensive documentation requirements

Make production more efficient

### Keys to success

Address comprehensive design requirements with Solid Edge

Introduce product development guidelines

Employ synchronous technology for quick design changes

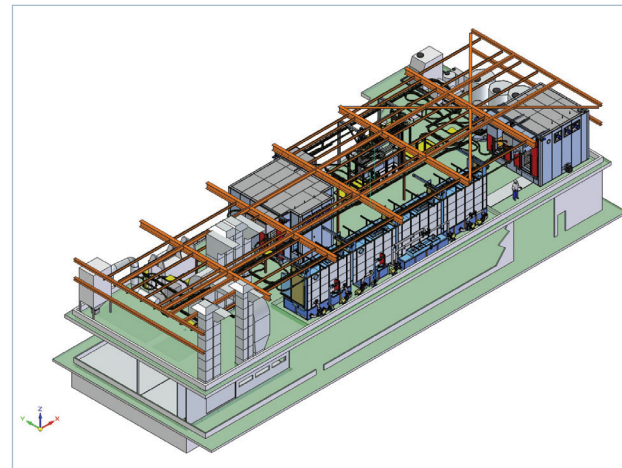
Manage data companywide with Teamcenter

**Solid Edge with synchronous technology enables design modifications to be made significantly faster and easier compared to prior method and other systems; company realizes tenfold improvement in design time turnaround**

### Two highly successful product lines

In business for more than 50 years, Leutenegger + Frei AG, based in Andwil, Switzerland, is a leader in electric bakery equipment, fermentation stopping installations and complete cooling systems. Product innovation, compelling aesthetic designs and high quality production enable the company to regularly meet and exceed today's market demands. For example, the freshness trend requires good-looking devices with smart functionality that can be permanently usable in bakeries and integrated bake-off-stations in combination with cold storage units. Such devices, while more expensive, represent an exceptional investment for the buyer. The devices provide superior aesthetics and productivity yet can be effectively amortized through energy efficiency, higher productivity and longevity.

In the mid 1970s, Leutenegger + Frei established a second, but equally successful line for industrial surface engineering, which involves applying appropriate treatments to the applicable components. Today, the company's portfolio comprises cleaning and pretreatment stations, paint



finish and powder coating cabins as well as baking and enameling furnaces, which operate in combination with independent material handling systems. In paint shops all over Europe, Leutenegger + Frei's single piece, task-specific designs provide the right brightness. To produce such equipment, the company faces completely different requirements than those faced in series or mass production. In this domain, comprehensive consulting is essential, with the result being installations according to very particular customer needs.

Nevertheless, like series production, the equipment must be designed and manufactured very efficiently. And such projects typically involve one or more new challenges. For example, an advanced system may require addressing extremely large assemblies and large-sized parts,

## Results

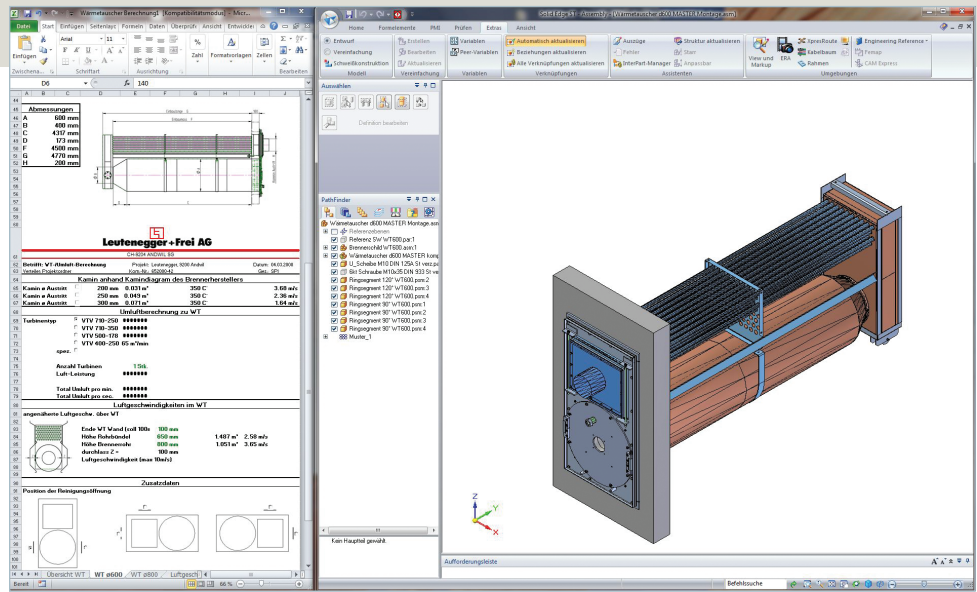
Design time substantially reduced, e.g., 2 to 3 weeks down to one day

Complex installations easily addressed

Assembly feasibility securely evaluated

Significantly fewer errors and part interferences in installations with 2,000 to 4,000 parts

Able to readily handle unique sheet metal forming applications



complex materials handling and logistics during installation, and the assembly of hall-filling components, as well as overall project accountability including material handling systems and controls.

## Changeover from 2D to 3D/2D

While diverse market opportunities are pursued by the company's specialized sales teams, its engineering departments are organized for maximum flexibility. "By opening up our development and design, we secure knowledge and gain flexibility", says Erich Leutenegger, managing director of the company. "Series production of bakery equipment ensures capacity utilization during times with fewer paintshop projects. Service efficiency benefits from more tasks in total. According to this strategy, a single CAD system should fit the divergent fields of application."

In 2004, the company's 2D system was causing a variety of concerns. Its effectiveness was being challenged, especially considering market advancements in 3D for product development. Management soon began examining the leading mid-range systems, particularly in terms of the company's unique needs. At Leutenegger + Frei, only a few engineers are involved in wholly new product design projects; most of them are detailing existing designs. Considering this, it only made sense that the new system be fully 2D compatible.



"We knew that Solid Edge fulfilled this main specification best, as well as provided superior handling of imported data and large assemblies," says Harry Lachauer, the company's director of technology and production.

Not surprisingly, Solid Edge® software was selected as the company's new CAD technology. Marco Petrillo, the company's project director of Information Technology, points out, "We greatly facilitated the implementation by introducing process guidelines. We further demonstrated the company's commitment to our new 3D technology with an investment in additional software licenses. The guidelines and the extension to more than 20 workplaces made a big difference to our users. Once the designers started

"Synchronous technology is as easy as 2D where you just add a dimension and change it, but because parts update our designs are sure to fit."

Erich Leutenegger  
Managing Director and  
Governing Board Delegate  
Leutenegger + Frei AG

experiencing the ease and power of Solid Edge, acceptance was imminent. More importantly, productivity increased significantly."

#### **Introducing product data management**

Shortly thereafter, management added product data management (PDM) technology in the form of Teamcenter® software. While the company was successfully completing the implementation of Solid Edge, Teamcenter became the system for all document types, including purchase and standard parts. Employing a specially designed interface, approved articles now go into the enterprise resource planning (ERP) system. The ERP system, which was updated in 2009, is driving address, order and purchase management. Moreover, not only dimensions and other geometric data are entered, but also other significant parameters and technical data, including power input, voltage and material. In short order, Teamcenter, with its advanced yet simple versioning, valuable data storage processes and BOM transfer capabilities, greatly facilitated project collaboration and efficiency. In addition, it served as a natural complement to Solid Edge for managing project information, further boosting the productive use of the CAD system.

#### **Efficient processes at large installations**

Hall-filling installations with 2,000 to 4,000 parts are especially challenging – in the tender phase as well as in design, manufacturing and assembly. For this task, Solid Edge enables an intelligent procedure, which combines 2D layouts, reference parts for mass and interface determination, and the benefits of 3D modeling. "Solid Edge enabled us to establish a nearly flawless process from designs, based on photorealistic descriptions, up to comprehensive, individual installation documentation," says Lachauer. "Our customers' needs are fulfilled efficiently and securely. At all stages, effective visualization options are available, which help to explain design propositions, secure assembly, clear clash conditions and test

functionality. We are able to illustrate our installations on paper as if they were already manufactured."

Most assemblies are unique, providing limited possibilities for modularization and parameterization. Leutenegger explains, "We assemble our installation very easily within the CAD system. Doing so physically before actual installation would be impossible due to the enormous size and the required logistics." Lachauer adds, "Despite all standardizations, we have to focus on the best fulfillment of the individual customer's needs. Doing so effectively determines our success." At the same time, whenever possible, the company is achieving significant cost reductions. In the past, heat exchangers have been newly designed despite similarities in layout. "After a needed feasibility validation, we parameterized the complex components using Solid Edge", says Petrillo, "reducing the needed design time from two or three weeks to one single day."

#### **Sheet metal forming made easy with synchronous technology**

Sheet metal forming represents an especially demanding application. The company processes up to 60 percent stainless steel. "The bakery equipment has to be convincing in terms of design, surface quality and everyday maintainability," says Leutenegger. "We are proud of some of our unique bending operations. These truly distinguish us from other manufacturers." He notes, "Solid Edge with synchronous technology plays an important role in bending with sheet metal capabilities that we use every day. We are still fascinated by its exceptionally high functionality and perfect support for our needs." Lachauer adds, "The sheet metal functions of Solid Edge are really remarkable."

The company expects further gains in sheet metal design with the synchronous technology update. When huge outer walls are re-used with different dimen-

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Harry Lachauer  
Director of Technology  
and Production  
Business Management Member  
Leutenegger + Frei AG

## Solutions/Services

Solid Edge with  
synchronous technology  
[www.siemens.com/solidedge](http://www.siemens.com/solidedge)  
Teamcenter  
[www.siemens.com/teamcenter](http://www.siemens.com/teamcenter)

## Customer's primary business

In business for more than 50 years, Leutenegger + Frei develops and manufactures bakery ovens, fermentation stopping plants and multi-frost systems. The company is also an industry leader in its sector in delivering surface technique, paint finish and powder coating plants.

[www.leutenegger.com](http://www.leutenegger.com)

## Customer location

Andwil  
Switzerland

**"Using Solid Edge with synchronous technology, we were able to reduce design times from two or three weeks to one single day."**

Marco Petrillo  
Project Director IT  
Leutenegger + Frei AG

sions, all border design elements are retained. Using Solid Edge with synchronous technology, the outlines can be adjusted independently from the creation steps in a drag and drop manner, which reduces editing times. "Synchronous technology is as easy as 2D where you just add a dimension and change it, but because parts update our designs are sure to fit," says Erich Leutenegger.

The combination of 3D technology and PDM essentially eliminates errors and uncertainties for the sheet metal procedure. Petrillo explains, "Every model could be designed or edited by any of our engineers. Using Solid Edge with synchronous technology, we can now adapt products without having to understand the designs of other engineers. This time savings gives us a huge competitive advantage."

## Best-in-class technology, great service

The highly successful technology implementation was augmented by Quadrix AG, Siemens PLM Software's local partner. Quadrix addressed Leutenegger + Frei's requirements with the appropriate level of consulting, installation and technical services. Quadrix is an established provider of PLM solutions – CAD, FEM, CAM and PDM – for Siemens and has won several



national and international awards that further highlight its ability to deliver value.

"We are certain that we made the right technology decisions", says Lachauer, "both in terms of products selected as well as the service provider. We have found an excellent solution – best-in-class technology and great service – one in which everyone benefits."

**"...We are able to illustrate our installations on paper as if they were already manufactured."**

Harry Lachauer  
Director of Technology  
and Production  
Business Management Member  
Leutenegger + Frei AG

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