

Consumer products and retail

Stöckli Swiss Sports

Optimizing and individualizing any ski in just one hour

Products

Solid Edge

Business challenges

Developing new products

Re-using company knowledge

Improving data management

Increasing production efficiency

Using equipment more effectively

Producing customized variants quickly and simply

Keys to success

Utilize Solid Edge to develop the shape of the ski, reduce development time and increase overall operational efficiency

Apply measurement data from Excel spreadsheets in CAD modeling

Results

Reduced time to produce variants from two days to less than one hour

Realized 70 percent time savings, even with manual work

Optimized ski shape for individual performance



With Solid Edge, Stöckli's skis adapt to the skiing style, proficiency and body of the wearer – and not the other way around

From 30 ski manufacturers to one

It all started in the 1930s, when Josef Stöckli, a passionate skier, made his own skis out of solid ash wood. More and more friends and acquaintances noticed his work and ordered their skis from him. Stöckli worked during the day and made skis in his free time, until it became too much for him. In 1935, he turned his vocation into his occupation and founded Skifabrik Stöckli AG.

Back then, around 30 ski manufacturing companies were operating in Switzerland. Some of the larger ones, like Schwendener,

Attenhofer and Authier, thrived for many years, but today, some 80 years later, there is only one ski manufacturer left in the skiing nation of Switzerland: Stöckli.

50,000 skis a year – all hand-made

From a one-man company, Skifabrik Stöckli AG, now Stöckli Swiss Sports AG (Stöckli) has developed into a firm that employs a workforce of 250 people, with production of 50,000 pairs of skis per year. Mathieu Fauve, research and development (R&D) manager at Stöckli, comments on this increase: "We have reached full capacity as regards the cycle times in the presses that the skis run through. Producing 50,000 pairs a year corresponds to approximately 1,000 pairs per week."

A lot has changed since the early days, but one thing has stayed the same: in Malters,

"With Solid Edge, we draw all the important parts of the ski – side geometry, height profile of the core, toe protection, and others – and many other components that are important for overall ski production, including the cassette and insole wedges."

Stephan Renggli
Equipment Engineer
Stöckli Swiss Sports AG



"Solid Edge is fast and precise, and offers more functionality than we will ever need, yet it is still intuitive to use, especially in the 3D modeling environment."

Mathieu Fauve
Research and Development Manager
Stöckli Swiss Sports AG



in the region of Lucerne, where the skis have been made since 1986, manual work is still paramount. Stöckli manufactures skis exclusively in the more elaborate sandwich construction, unlike all the large competitors that produce skis for the mass market in shell construction. Stöckli consistently takes a different path.

The days of purely wooden skis have long been numbered. Stöckli built its first metal skis in 1957, and then two years later switched over completely and developed the first composite and plastic skis. The complexity of the structure of a current Stöckli ski is apparent when examining its profile from the side. At least seven layers are glued and pressed, layer-by-layer. These layers always include a steel edge, rubber

film, Venol side panel, fiberglass straps, aluminum straps and a polyamide surface. The heart of every ski is the wooden or plastic core, which gives the ski its flexibility and prestressed structure. Four or five production processes are required solely for the core, which is, of course, always hand-made.

Stöckli attaches great importance to individuality and thus to advising customers. The skis are available in Switzerland exclusively in 12 Stöckli branches, three rental and service centers and more than 30 specially selected sports shops at the most important skiing locations. Approximately 40 percent of the annual production is exported to 32 countries, including the United States, Italy and Austria.



Tradition and innovation on the same track

Although the ski-makers at Malters have tradition in mind, they embrace scientific progress. Thanks to its project-oriented cooperation with the WSL Institute for Snow and Avalanche Research in Davos, the EPFL in Lausanne and a variety of other universities, Stöckli is one of the most innovative ski manufacturers. Theoretical knowledge is part of the company's extensive know-how and is supplemented by extensive ski racing experience.

Since 1991, Stöckli has been actively involved in the FIS Ski World Cup, and is the first Swiss ski manufacturer to win the overall FIS Ski World Cup in ladies alpine skiing. Together with Tina Maze, Fanny Smith, Alex Fiva and Nils Mani, the ski manufacturer has managed to win a total of five FIS Ski World Championship medals, as well as three overall FIS Ski World Cup victories. Its résumé also includes two Olympic gold medals by Tina Maze. These successes are no accident; they are the result of intense attention to detail, extensive know-how and immense effort. Recently, Stöckli produced 1,700 pairs of racing skis, 220 of which were for Tina Maze alone. For this, a little less than five tons of Swiss wood were used and a total of more than three kilometers of covering was fitted. For ski racing, Stöckli uses 14 different coverings in order to always have optimal sliding characteristics.

A big step: from Excel to Solid Edge

Production at Stöckli is as innovative as the skis themselves. Since 1999, ski designers have been using computer-aided design (CAD) technology – Solid Edge® software from product lifecycle management (PLM) specialist Siemens PLM Software. At that time, Stöckli had decided to introduce a CAD system in order to use design model data directly on its computer numerical control (CNC) production machines without having to add time-consuming programming. After an evaluation of available CAD systems, only Solid Edge was able to meet the decisive requirement: compatibility with Excel® software. With this critical capability, Stöckli could automatically create a ski shape with just one work step, applying the measurement data that had been previously stored in Excel spreadsheets. Another advantage was ease of use enabled by the Solid Edge user interface, which offers the same workflow for each task, whether simple or complex, as it progresses.

"With Solid Edge, we draw all the important parts of the ski – side geometry, height profile of the core, toe protection, and others – and many other components that are important for overall ski production, including the cassette and insole wedges," says Stephan Renggli, equipment engineer at Stöckli.

"Each ski is as individual as the wearer, so we adapt the ski to the wearer. We optimize the ski to match the style, proficiency, height and weight of the skier."

Mathieu Fauve
Research and Development Manager
Stöckli Swiss Sports AG



Despite the power of this CAD program, it is surprisingly easy to operate. "Solid Edge is fast and precise, and offers more functionality than we will ever need, yet it is still intuitive to use, especially in the 3D modeling environment," notes Mathieu Fauve, R&D manager at Stöckli.

Renggli confirms Fauve's comment regarding the software's user-friendliness: "I already had 3D down pat before I came across Solid Edge but, all the same, it was a very positive experience. You can create the object in the empty document straightaway. In other systems, there is often a laborious process of having to define various factors before you can start with the design. It took me just a couple of minutes to get used to the program."

The software was implemented successfully at Stöckli by Siemens PLM Software partner Quadrix AG an established provider of customer-oriented PLM solutions, including CAD, finite element modeling, computer-aided manufacturing (CAM) and product data management (PDM). Having won several national and international awards, Quadrix has proven its expertise and earned significant customer accolades in this specialized field.

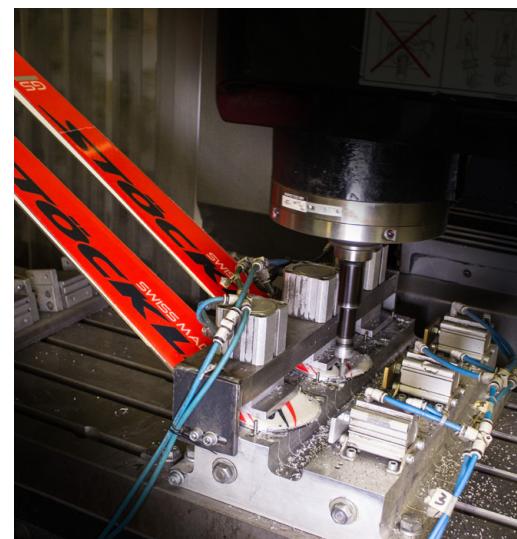
From two days to one hour

With Solid Edge, new variants are now simply and quickly produced. "Each ski is as individual as the wearer, so we adapt the ski to the wearer," explains Fauve. "We optimize the ski to match the style, proficiency, height and weight of the skier."



"Before Solid Edge, the shapes were still conventionally created at Stöckli using Excel spreadsheets. For this, it took up to two days for just one new variant of a ski. With the new software, the same task was finished in an hour. That was a huge step."

Gerhard Eimer
Managing Director
Quadrix AG



Solutions/Service

Solid Edge

www.siemens.com/solidedge

Customer's primary business

Stöckli Swiss Sports AG is the last big Swiss ski manufacturer. Every year, approximately 35 employees manufacture about 50,000 pairs of skis, all hand-made. About 40 percent of these are exported, predominantly to the United States, Italy and Austria. The company also produces ski boots and poles, fitness/adventure apparel, bikes and other outdoor equipment. www.stoeckli.ch

Customer location

Wolhusen
Switzerland

Partner

Quadrix AG
www.quadrix.ch



The time savings achieved with Solid Edge is precisely quantified by Gerhard Eimer, managing director at Quadrix: "Before Solid Edge, the shapes were still conventionally created at Stöckli using Excel spreadsheets. For this, it took up to two days for just one new variant of a ski. With the new software, the same task was finished in an hour. That was a huge step."

More than skis

The company is well equipped for the future. The entrepreneurial Kaufmann

family, from Entlebuch, Switzerland, owned a substantial share in Stöckli Swiss Sports AG for more than 20 years; in the spring of 2014, the family took over complete ownership of the company. Years ago, Stöckli diversified in order to be less dependent on sales of winter equipment. In 1996, the company launched its own line of bikes. Today, Stöckli's portfolio includes skis, boots and poles, outdoor clothing, bikes and other outdoor equipment.

Siemens PLM Software

Americas +1 314 264 8287
Europe +44 (0) 1276 413200
Asia-Pacific +852 2230 3308

www.siemens.com/plm

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