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AEROSPACE AND DEFENSE

Either Tech

Manufacturer uses Solid Edge and NX CAM to fully leverage 5-axis machining so it can enter the aerospace market

Products

Solid Edge, NX

Business challenges

Stop diminishing profit margins

Expand into 5-axis machining to enhance competitiveness

Diversify the business by penetrating the precision machining market

Keys to success

Provide seamless coordination between 5-axis CAM software and machine tools

Implement powerful CAD system to reduce complexity of drawing management

Use 5-axis machining to enter new precision machining market

Results

Facilitated entry into the competitive aerospace market

Eliminated the need to repair 3D models

Enhanced flexibility and efficiency by enabling key team members to fine-tune NC programs during mass production

Siemens Digital Industries Software solutions enable Either Tech to increase productivity and part quality

Switching from the optical industry to aerospace

It is not uncommon for companies that start out as import/export businesses to expand into manufacturing, where they often thrive based on their own unique tactics. With two production bases in central and southern Taiwan, Either Tech has been recognized for its precision machining by optical and aerospace customers in Japan, Europe and the United States (U.S.).

Founded in 1996, Either Tech was established by its parent company to serve the U.S. market. Four years later, the company built a new factory to control quality management and market its own products. It added precision machining to its service items in 2008, and has obtained certificates such as Quality Management System of ISO 9001, ISO14001 and AS 9100D, progressively enhancing its management and production capabilities.

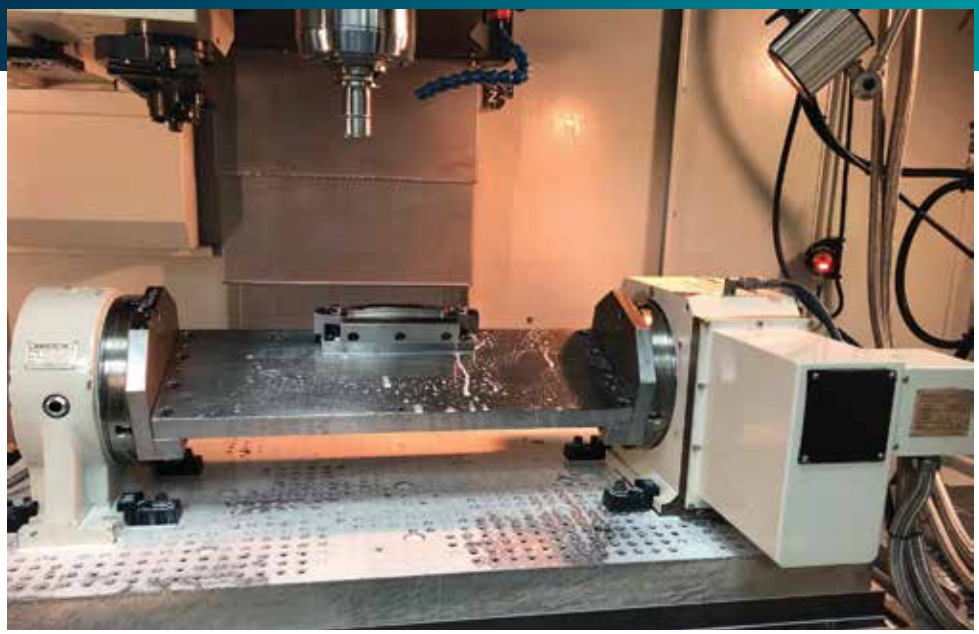
Either Tech engaged in comprehensive machining, with machine tools like lathe machines, milling machines and mill-turn complex machines as well as a variety of cleaning and measuring equipment.



Results *(continued)*

Optimized NC path for shorter machining time while reducing wear on machine tools

Used new CAM system to increase production capacity



Specializing in the development of parts for optical devices, the company is the original equipment manufacturer (OEM) of international brands such as Canon, Panasonic, Samsung TW and Blackmagic Design. It has a product catalog covering items such as camera mounts, lens mounts, cam, flash light accessories, and other relative camera parts. The company has gained customers' trust, and as a result its products have been popular for more than a decade.

However, global brands need to cut costs and seek lower-priced suppliers, and Either Tech's management team is keenly aware of this shift.

Hsieh Chu Chi, vice president of Either Tech, believed the company needed to make an adjustment and resist the urge to take orders at lower prices while simultaneously increasing investment. In 2016, the company successfully established a second production line in Chiayi, Taiwan, launched mass production in April, 2017 and started to develop high-level products to enter the competitive aerospace market. The company now boasts large customers like AIDC, ChenFull International and JYR Aviation. Either Tech is confident in its ability to enter new markets due to its long-standing, quality centered corporate culture.

> "When our engineers tested two methods for the same work piece, the time difference could be up to 20 minutes, so if we make 1,000 pieces a year, the difference would be 20,000 minutes."

Guo Ren-Chi
Deputy Manager
Either Tech Co., Ltd.



"Being familiar with 5-axis machining has brought us more business opportunities. There are customers who have placed orders just for our advanced 5-axis machining capabilities. When we first made the investment we struggled, but it paid off in the end. Now our 5-axis machines almost never stop."

Hsieh Chu-Chi
Vice President
Either Tech Co., Ltd.

"The introduction of the advanced 5-axis machining and manufacturing solution integrating Solid Edge and NX CAM has helped us master the higher precision machining capability," says Hsieh.

Creating new opportunities

Although Either Tech has a long history of applying computer-aided design (CAD)/computer-aided manufacturing (CAM) machining systems, it boasts a multibrand CAD application environment, a rarity in manufacturing. This enables them to meet the drawings and documents processing requirements of customers or products. However, despite making significant investments along the way, the company encountered difficulties in 5-axis machining projects.

At the time, in order to take orders for aerospace parts, the company purchased new 5-axis processing machines and turning and milling complex machines, and upgraded its existing software to a 5-axis version. However, after the machines arrived at the factory and testing began, the engineers realized that hardware and CAM software were incompatible. Either Tech started having problems meeting delivery deadlines, which put the longstanding relationships with their customers at risk. It was clear a better manufacturing process needed to be developed.

To help Either Tech address this issue, manufacturers that use 5-axis machines recommended CADEX Technology (CADEX), which has 5-axis machining experts. CADEX demonstrated Siemens' Solid Edge® software and NX™ software



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for computer-aided manufacturing (CAM) to the manufacturing team and met with Either Tech's management team. CADEX also conducted sample tests by postprocessing 5-axis, turning and milling operations. They were able to generate the right computer numerical control (NC) programs for all the machines on the shop floor. As a result, Either Tech's new machines, which had stood idle for quite a while, finally started cutting metal again.

Either Tech engineers quickly mastered the new Solid Edge and NX CAM solutions, which enabled them to complete all their tasks on time. They have not only transferred legacy part models, but also used the new integrated software for all new work pieces after 2016, leading to simplified part 3D part models management. All engineers are now familiar with Solid Edge and NX CAM. The improved workflow allows the key team members to adjust machining processes during the mass production without having to wait for the original author, which has greatly increased flexibility and efficiency.

Implementing 5-axis machining to achieve quality improvement has indeed helped them grow their business. Hsieh notes, "Being familiar with 5-axis machining has brought us more business opportunities. There are customers who have placed orders just for our advanced 5-axis machining capabilities. When we first made the investment we struggled, but it paid off in the end. Now our 5-axis machines almost never stop."

As technicians become increasingly familiar with 5-axis operations, they improved machining precision and part quality. By the end of 2017, the number of parts processed with 5-axis machining and mill-turning accounted for more than 60 percent of the total. This enabled the company to achieve the investment goal of improving its competitiveness and attracting more orders with 5-axis machining.



Exploring for the best method

Either Tech's work efficiency is much better due to the integration of Solid Edge and NX CAM. In the past, when the company used software from other brands to open a part file and then converted it for Solid Edge, it had to rectify the problem of surfaces and imperfect solid models, which took a significant amount of time. After Either Tech adopted Solid Edge to open files directly, it eliminated the need to repair surfaces or edges, which helps them provide high-quality solid models for NC programming.

Guo Ren-Chi, deputy manager at Either Tech, explains, "When I use the same parameters for high-speed cutting, the surfaces machined using other CAM software tends to be rough, while the ones made with NX CAM are smooth. It is beautiful; a quick glance is sufficient to tell that the former is relatively rough while the latter is much more delicate."

Moreover, after generating programs in NX CAM, there is an option to optimize the tool path, which can be used to improve the machining process on NC machines. On the one hand, it can significantly reduce the machining time as well as the wear and tear on the machine. On the other hand, when performing solid-line surface machining or multi-axis machining, the user can generate programs while selecting surfaces and edges to precisely control the cutting process. Such a variety of options help engineers define the most effective way to machine complex parts.



In addition, Guo believes that NX CAM has excellent multi-axis capabilities:

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He recognizes the diversity of NX CAM functionality, and believes that as long as engineers are willing to keep trying, they can refine the machining method and create value for the company.

Solutions/Services

Solid Edge
solidedge.siemens.com

NX CAM
www.siemens.com/nxcam

Customer's primary business

Either Tech specializes in the machining and manufacturing of parts for aerospace, motor vehicles, video cameras, measuring equipment and various hardware parts. The company's products are mainly sold in the United States, Japan, South Korea, Hong Kong and Shanghai. It has factories in Kaohsiung, Taiwan and Chiayi, Taiwan.
www.eithertrade.com.tw

Customer location

Kaohsiung City
Taiwan

Solution Partner

CADEX Technology Co., Ltd.
www.cadex.com.tw

Ren-Chi provides an example: "When our engineers tested two methods for the same work piece, the time difference could be up to 20 minutes, so if we make 1,000 pieces a year, the difference would be 20,000 minutes.

And that's only for one part. The enhanced machining efficiency using innovative methods has increased our production capacity remarkably."

Either Tech is going all out to develop business in the aerospace market and is quickly resolving any challenges by relying on CADEX's technical support. Fortunately, be it online troubleshooting or onsite assistance in resolving difficult problems, CADEX has made itself an indispensable CAD/CAM partner for Either Tech.

> "The introduction of the advanced 5-axis machining and manufacturing solution integrating Solid Edge and NX CAM has helped us master the higher precision machining capability."

Hsieh Chu Chi
Vice President
Either Tech Co., Ltd.

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