

Bold decisions for a smart factory

A glimpse into production at Airforce Laser in Taiwan makes it immediately clear: In this company, the future of sheet metal production is already here. Air Force Laser was founded in 2004 by Larissa Chang and her husband, who was also an experienced manager. When he retired from the company, Larrisa Chang suddenly found herself in the role of CEO. With ambition and hard work, she acquired management skills and knowledge of sheet metal production. She receives support from her daughter Grace Chang, who now takes care of the logistics and programming for the company's machines. In order to stand out from the competition, Chang decided to position Airforce Laser as a full-service provider on the market and to specialize in the production of small series according to individual customer requirements. She receives support from TRUMPF in the necessary automation and digitalization of the company.



Airforce Laser

www.airforce.com.tw

The company Air Force Laser, founded in 2004, offers products and services covering the entire sheet metal process chain. With modern machinery and high standards of quality and reliable delivery, the company supports customers in component design and supplies parts as well as complete assemblies from a single source. With the help of automation and digitalization, Air Force Laser has positioned itself as an important player in the Taiwanese market with the production of individualized small series.

INDUSTRY	NUMBER OF EMPLOYEES	SITE
Metal processing	25	Taichung City (Taiwan)

TRUMPF PRODUCTS	APPLICATIONS
■ TruTops Fab Quickjob ■ TruTops Fab Production	■ Laser cutting ■ Bending ■ Punching ■ Software

Challenges

What Larrisa Chang lacked in knowledge and experience in the field of management and sheet metal processing, she made up for with commitment, hard work and ambition. In just a few years she has managed to gain a foothold in the male-dominated industry. But for Chang, this is not enough. She wants to surpass the competition and prepare her company for the future. “We consciously withdrew from large-scale production and specialized in small-series production tailored to customers' requirements for their products. “It was a market niche with potential,” she explains.

The early change in thinking gave Airforce Laser a clear advantage over the competition, thereby enabling Chang to gain a number of customers over the years. However, as the order situation increases, the Manufacturing Execution System (MES), i.e. the company's production control system, reaches its limits. One reason: The employees manually enter the routing slips for the individual work steps. "In doing so, many errors occur. The problem was a lack of language skills," explains Chang. "In Taiwan it is difficult to find well-educated, skilled professionals. Many of our employees come from Vietnam. Many cannot read and understand Chinese."

Therefore Chang made the decision to digitalize and automate the company. The CEO is once again taking an unconventional path and setting an early course towards Industry 4.0. TRUMPF advised her on this journey from the start and presented the TruConnect solutions to her during a TruConnect consulting session.



"We were able to increase our efficiency both in programming individual work steps and in production by 50 percent."

LARRISA CHANG
CEO, AIRFORCE LASER



Solutions

Larrisa Chang invests in the TRUMPF production solution Oseon Quickjob and Oseon Production. Order management and reporting processes in production undergo changes in a short time. The machines now automatically report what happens in the individual production steps. Employees have access to real-time data about order status and production status, machine operating status and material inventory. Bottlenecks or problems in production are identified early thanks to the new transparency, and processes are optimized accordingly.

"It felt like we had switched on a bright light in absolute darkness: Suddenly we had a much deeper insight into our own processes," says Chang. "It allowed us to quickly see where we still have room for improvement. It helped us to raise our level of quality and reduce throughput times." By the end of 2020 the company increased its efficiency by 50% - both in programming individual work steps and in production. "TruTops Fab distributes the manufacturing orders automatically to our machines. This means they are being utilized to the best possible extent," explains Chang. Customer orders can be processed in parallel and quickly using TruTops Fab, and the software also takes over production processes such as printing labels on the sheet metal parts.

After initial skepticism, the Air Force employees are now completely enthusiastic about their Smart Factory, according to Chang: "The software helps with the organization of work equipment. In bending, for example. In the past, printed template drawings were used for this. These are now digital and can be accessed directly via the system"

Implementation

"I decided on the TruConnect solution after visiting the sheet metal production of TRUMPF China in Taicang," reveals Chang. "I was impressed by the production and was able to truly imagine for the first time how our sheet metal production could work in the future." Then the path to the Smart Factory was relatively easy, as the Oseon modules were easy to integrate into Airforce Laser production because the software already matched the existing programming and the TRUMPF machines.



Forecast

"The employees at TRUMPF understand the world of metal and were valuable sparring partners, from the initial idea to implementation," explains Miss Chang. "We produce faster and have fewer rejects. This means we can respond better to our customers' individual requests, even with a short lead time. Reason enough to further expand the new solution. We want to improve our material flow control: With the introduction of the Oseon Logistics software and the integration of a second TruStore system." For this reason Larrisa Chang is certain that the company has a bright future and that she will be able to hand it over to her daughter someday with a clear conscience

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