

Bold decisions create a smart factory

A glance at Airforce Laser's production facility in Taiwan immediately makes one thing clear immediately. In this company, the future of sheet metal production has already become the present reality. Airforce Laser was founded in 2004 by Larrisa Chang, her husband and an experienced manager. When he leaves the company, Larrisa Chang suddenly finds herself in the role of managing director. By applying ambition and diligence, she gained management expertise and knowledge of sheet metal processing. She has support from her daughter Grace Chiang, who is now in charge of logistics and machine programming at the company. In order to set itself apart from the competition, Chang decides to position Airforce Laser on the market as a full-service provider and to specialise in small batch production to meet individual customer requirements. TRUMPF provides her with support when it comes to the automation and digitalisation of the company.

Airforce Laser

www.airforce.com.tw



Founded in 2004, Air Force Laser offers products and services covering the entire sheet metal process chain. With modern machinery and a high standard of quality and delivery reliability, the company supports customers in component design and supplies parts and complete assemblies from a single source. Air Force Laser has used automation and digitalisation to position itself as a key player on the Taiwanese market for bespoke small series production.

INDUSTRY

Metal processing

NUMBER OF EMPLOYEES

25

LOCATION

Taichung City
(Taiwan)

TRUMPF PRODUCTS

- TruTops Fab Quickjob
- TruTops Fab Production

APPLICATIONS

- Laser cutting
- Bending
- Punching
- Software

Challenges

What Larrisa Chang lacks in knowledge and experience in management and sheet metal processing, she makes up for with commitment, hard work and ambition. In just a few years, she has managed to make a name for herself in the male-dominated industry. But this isn't enough for Chang. She wants to leave the competition trailing in her wake, and prepare her company for the future. "We have deliberately stopped large-scale production to specialise in the small batch production of products according to customer requirements. That was a market niche with potential," she explains.

This early change of tack gave Airforce Laser a clear lead over the competition, enabling Chang to gain a number of new customers over the years. However, the Manufacturing Execution System (MES), the company's production control system, reached its limits as orders increased. One reason for this is that the employees had to enter the dockets for the individual work steps manually. "There were lots of mistakes due to a lack of language skills," explains Chang. "It is difficult to find highly-trained specialists in Taiwan. Many of our employees therefore come from Vietnam, but many of them can't read or understand Chinese."

Chang therefore decided to digitalise and automate the company. In doing so, the Managing Director is again taking an unconventional approach and setting an early course towards Industry 4.0. TRUMPF has advised her on this journey from the very beginning and introduced her to the TruConnect solutions during a TruConnect consulting session.



"We achieved a 50% increase in efficiency in relation to programming individual work steps and in production."

LARRISA CHANG
MANAGING DIRECTOR, AIRFORCE LASER



Solutions

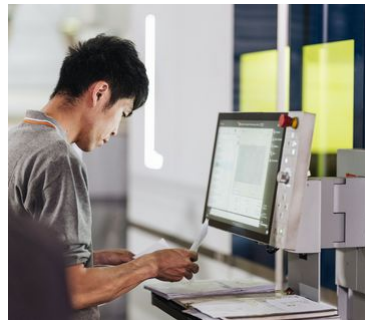
Larrisa Chang is investing in the TRUMPF production control solution Oseon Quickjob and Oseon Production. Order management and reporting in production are changing rapidly. The machines now automatically report what happens in the individual production steps. Employees have access to real-time data on order and production status, machine operating status and material stocks. Bottlenecks or production issues are identified at an early stage thanks to the new level of transparency, and processes are optimised accordingly.

"It felt as if we had switched on a bright light in total darkness, giving us a much deeper insight into our own processes", explains Chang. "As a result, we quickly realised where we could still make improvements. This has helped to increase our quality level and reduce throughput times." By the end of 2020, the company will have increased its efficiency by 50%, both in the programming of individual work steps and in production. "TruTops Fab automatically assigns the manufacturing orders to our machines. This means they are utilised to the full," explains Chang. Customer orders can be processed in parallel in a short time with TruTops Fab, and the software also handles production processes such as printing a label onto the sheet metal part.

After some initial skepticism, the Airforce employees are also won over by their smart factory, according to Chang: "The software helps to organise work equipment, e.g. for bending. In the past, we worked with printed template drawings. These can now be called up digitally and directly using the system"

Implementation

"I opted for the TruConnect solution after visiting TRUMPF China's sheet metal processing facility in Taicang," says Chang. "I was impressed by the production and for the first time I could really visualise how our sheet metal processing could work in the future." The fact that the path to the smart factory was then relatively simple was because the Oseon modules were easy to integrate into the Airforce Laser production system because the software was already calibrated with the existing programming and the TRUMPF machines."



Forecast

"The employees at TRUMPF understand the world of metal and were valuable sparring partners, from the very first idea through to implementation," explains Miss Chang. We can manufacture products more quickly, with fewer rejects. This allows us to respond better to the individual wishes of our customers, even with short lead times. This is reason enough to pursue the expansion of the new solution. We want to improve our material flow control by introducing Oseon Logistics software and the integration of a second "TruStore System". Larrisa Chang is therefore confident that the company is poised for a bright future and that she will be able to hand it over to her daughter at some point, knowing that it is in good shape

Date: 2023-11-08

