COMPANY PROFILE

AFFOLTER

PRODUCING GEARS IN LARGE AND SMALL RUNS

Affolter offers compact machine tools for gear-hobbing applications based on customized numerical control with precision, flexibility, and productivity benefits.

By KENNETH CARTER, Gear Solutions editor

Watches, aerospace components, and, now, even automobiles require high-precision parts and gears.

Swiss history has often been synonymous with Swiss accuracy, and Swiss company Affolter has been proving that distinction for more than a century.

"We help manufacturers to make very precise gears," said Mikaël Affolter, head of sales at Affolter. "In the watch industry, you need to be very precise. This is also true for medical device robots and aerospace. We have high accuracies with our machines, but I would say we actually do more than just sell machines. We work very closely with customers to optimize the process — from tooling and software to automation."

GEAR-HOBBING MACHINES

Affolter's CNC horizontal gear-hobbing machines can be used for gear hobbing of spur, helical, conical, or bevel-on pinions, as well as wheels, shafts, cylinders, and worms up to a module size of 2.0.

The CNC hobbing machines have been developed and manufactured by Affolter's engineers and are able to meet a customer's production requirements that can serve microtechnology sectors.

Affolter's CNC machine tools for cutting microtechnology gears are used in servo motors and by the watch, micromechanics, automotive, aircraft, robotics, and dentistry sectors.

These machines feature up to 16,000 rpm cutting and dual direct-drive torque motor work spindles, which are ideal for small gear parts up to 2/12.7 dp module.

PRECISION, INNOVATION, AND PEOPLE

But as Affolter said, the company does more than just sell machines, and that is part of Affolter's overall philosophy when it comes to its everyday operations.

"Our philosophy is about precision, innovation, and people," he said. "I think precision is what we have in Switzerland — that Swiss-made high precision. It's all about innovation. It keeps us moving forward and, essentially, improving preference and efficiency. And people — our employees, customers, and partners are the actual heart of everything here."

Innovation has been a key factor in how Affolter has kept pace with a constantly changing industry, according to Affolter.

"The industry is changing, with automation, digitalization, and also miniaturization leading the way," he said. "We have developed our own CNC control system, introduced advanced software, and created dedicated automation solutions for our machines. It's really important that we have kept our agility, and being an independent, family-run business, it's also important to innovate very quickly and stay very close to our customers."

Staying close to customers is crucial, especially when they come to Affolter with a challenge.

"We listen to them carefully, because when they have a challenge, each customer has a unique story, a different material tolerance, volume goals, etc., and we always take the time to understand what they need," he said. After that, we have the whole team — from the sales team to the application team or even our local service team — work very closely with them to offer the best solution."

With a century's worth of expertise, finding solutions to problems often becomes a little easier, according to Affolter.

"With our years of experience, we have a good fundament," he said. "We can say, 'OK, we've already done parts like this.' Or, we can also start from nothing. We have an R&D department where we can develop new things. We also have our own software experts, so we can start from nothing, or we can use our track record to find answers to customers' challenges."

THE AF140

Affolter's years of expertise and innovation have come together most recently with a next-generation gear-hobbing machine for the industry, which is part of the company's second business unit — the AF140, according to Affolter.

"The AF140 was made to replace two other models — the AF90 and the AF100+," he said. "It's a model in between. We kept the flexibility and the agility of the AF100+, but made this machine very compact. The footprint is minimal, but it's still a very fast machine that you can use in mass production. You can also use it if you want to make some prototypes or a small batch. It works with both manual loading systems and other automatic setups."

With its minimal footprint, the AF140 is ideal for smaller workshops, according to Affolter. It's also ideal for smaller parts with up to a 40 mm diameter. Industries that could take advantage of the AF140's versatility include the watch industry, aerospace, and automation used in automobile production.

Affolter does more than just sell machines. (Courtesy: Affolter)

With its minimal footprint, the AF140 is ideal for smaller workshops. (Courtesy: Affolter)

With Affolter's newest machine, the industry response has been quite positive, according to Affolter.

"We have had a very good reaction," he said. "We exhibited this machine in Switzerland last June, and that was the first time we showed it to a customer. We expect to show this machine more in future exhibitions."

A CENTURY OF EXPERTISE

Affolter has been able to stay innovative for more than a century, and that is just part of what makes Affolter proud of the company.

"We have always stayed innovative, but also independent as a family company for over 100 years," he said. "And that's not easy in this industry. Because I'm the head of sales, it makes me proud to see our machines working day and night all around the world."

Those machines running all across the globe are part of a long company history when it started building high precision components for the watch industry, according to Affolter. The company was founded in 1919 in Switzerland by Louis Affolter, Mikaël's great-grandfather. Presently, the fourth family generation is in charge.

The enterprise continued to grow and be passed down through the generations, adding more innovations that included its gear-hobbing division, according to Affolter. The company now has four buildings with a fifth one under construction with a completion date in 2027.

"We continue to develop the company this way, and now we have about 170 employees," he said.

THE NEXT CENTURY

As Affolter begins a new century of business, Affolter said the company will continue to offer solutions to new challenges.

"It will be all about smart, connected, and sustainable manufacturing," he said. "Gears may be small, but they play a huge role in the way the world moves. I see more automation, data integration, and more customization. The future of precision manufacturing will be both human and technological, and that's exactly where we want to be."

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