



25 years Waterjet

„Our success resulted from inventing microwaterjet cutting.“

25 years of Waterjet: that sounds more like a great future ahead than only a grand past.

I hope so! As a matter of fact, we have many reasons to look back and ahead.

Reasons like growth?

Growth is a warranty for the future but it's not enough. Switzerland has high unit costs. Whatever we produce you surely find a competitor from abroad which offers lower unit costs. Consequently we don't need growth but new methods, new products, we must optimise our proceedings and invest in the right place.

Let's quickly look back. What fascinated you most in water jet cutting? Was it an innovative method back in the 80s?

I think so. You need to distinguish: is a technique new in the sense of “newly established” or in the sense of “developed to a higher level”. The idea to cut with a water jet goes back to mining to cut rock. The first patent on water jet cutting dates back to 1968. Shortly thereafter Boeing cut composites and other materials with water jets.

How did you get in touch with the technology?

I was an electrician in the 80s of the past century and worked for a glazier company. I had to check cutting machinery which was working with water jets. I was fascinated and suggested to continue to work with that machinery.

Did your manager accept?

No, but as much as it was disappointing it was nevertheless the first step towards the formation of our own company. In 1989 my colleague then, René Affentranger, and I founded a collective company called „Maurer und Affentranger, Waterjet“ which was specialised on water jet cutting. At five o'clock in the morning I started working and cut all day long workpieces, I was responsible for purchasing and worked part-time in the office. We then did all by ourselves. Everything was smaller and we improvised a lot. We cut plates for a building contractor and had to turn them around. Though we had a crane, its arm was too short so we borrowed it from the neighbouring company.

Despite these experiences your company grew well and quickly?

It depends. After five years we moved (a temporary solution) and after that we acquired a former textile factory. We worked on four machines and cut orders such as plates from chrome steel or inlays for architects and building contractors – microwaterjet cutting was not invented yet but we were capable of cutting very hard materials like granite but also delicate ones like silver or titanium.

With a certain lack of precision?

What is precision? Assume that we are cutting steel plates for the front of a school building according to a parametric code with a precision of half a millimetre. That is very precise for a front but it would not be precise at all for micro parts for a wrist watch.

What ignited the development of microwaterjet cutting?

The economic crisis in the year 2000 and the increasing demand for micro parts. We loved fiddly works and suddenly we became researcher. We had a vision: to develop a water jet cutting procedure which was ten times smaller and times more precise. Together with Prof. Kurt Heiniger from a University of Applied Science we developed the patented abrasive water jet micro machining procedure (awjmm®), expanded our factory by another 100 m² and founded Microwaterjet AG as a company.



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What machinery did you use? You can't simply by new machinery for a self-developed procedure, can you?

We built it by our own and perfected our method. That's how we became mechanical engineers. From those days our numeric machining centres F3, C3 and F4 are still on the market and we optimised it with our own software. A mile stone was not the fact that our cutting was more precise but that we were ready for mass-production. Today we work with 14 machining centres.

New technology equal new markets – true for Microwaterjet?

Absolutely. We gained customers from many micro industries including watchmakers and producers of medical technology. These are industries which need highly precise micro workpieces from complex and delicate materials such as composites or bio-compatible materials. As our burr-free cutting procedure is thermo-neutral, too, we are capable of cutting almost any material.

Let's look ahead: what's the future?

We are optimistic. Our procedure is established and an excellent basis to be developed further. I can't give out too much private gossip but we work on new procedures. R+D are essential for us because any procedure will find a successor and if it's only a copy of ours for a better price. Until then we need now procedures ready for the market.

