

Machining centres

From the vision to automation

Thanks to Fehlmann, G. & K. Schön's plan to invest in a 5-axis centre has resulted in an automation project. A Versa 825 from Fehlmann with industrial robots has given the company from Korschenbroich, Germany, a whole new competitive edge.



1 Expect the unexpected: instead of a single machine for 5-axis machining, a Versa 825 5-axis simultaneous machining centre from Fehlmann complete with Erowa automation now carries out challenging tasks at G. & K. Schön (Photo: Fehlmann)



2 The Erowa robot Leonardo carries in its standard version up to 24 UPC palettes (320 mm × 320 mm). The production unit is primarily used to manufacture cages made from case-hardening steel for roller burnishing tools (Photo: Fehlmann)

→ G. & K. Schön, based in Korschenbroich, Germany, excels in the manufacture of high-quality roller burnishing tools for the automotive and hydraulics industries. The company ranks among the leading specialist providers in this field in Germany. For 14 years they have been manufacturing these tools on a Picomax 60 4-axis machining centre from the Swiss manufacturer Fehlmann. However, at the start of the year 2016 this needed to be modernised.

Flexible automation was one of the key arguments

The only thing that was clear at that point, was that they wanted to use 5-axis machining in the future. And so, together with Fehlmann, initial plans were made to invest in a Picomax 75 complete with ATS 200 dividing unit with ERC robot from Erowa. A Picomax 75 was se-

lected because its five axes are fully integrated into the control system and this combination offers the best possible accessibility and precision for 5, 4, and 3-axis machining. In addition, the machine can operate as a pure 3-axis milling machine; the 4th and 5th axes can be retrofitted if required at any time.

The discussions, however, opened up completely new perspectives for Manag-

ing Director Klaus Schön: "First of all, I must point out that one of my employees and I had longed for and dreamed of the Versa from Fehlmann for years", says the company boss. "Despite this, the machine tool specialist Fehlmann really had their work cut out to convince us. However, when they pointed out the potential of the Versa 825 5-axis simultaneous machining centre, we travelled to Switzerland, where we took a look at it ourselves on site. This won us over, since we would have also easily been able to retrofit automation at a later point."

The Korschenbroich-based company essentially handles prototype production and small series, however Klaus Schön has always had an inclination towards automation. Irrespective of this, two older machines were to be replaced and they needed to compensate for an employee who is retiring. And so, an in-

i MANUFACTURER

Fehlmann AG Maschinenfabrik
CH-5703 Seon
Phone +41 62 769 11 11
www.fehlmann.com

i USER

G. & K. Schön GmbH
D-41352 Korschenbroich
Phone +49 2161 671305
www.g-k-schoen.de



3 G. & K. Schön
Managing Director
Klaus Schön in front of his Picomax 60, which he says has hardly needed any work in the last 14 years. In fact: “It remains a solid, reliable factor in our production hall”

(Photo: Fehlmann)

tensive benchmarking process was carried out before the investment.

Based on previous positive experiences with Fehlmann, the Versa was practically considered a given, since the main advantage of 5-axis machining (3 + 2 axes) for the company is that the roller burnishing tool previously had to be re-clamped for complete machining and this was extremely time-consuming.

Besides this technology, there were numerous other reasons to choose Fehlmann, says Klaus Schön. These included reliability, attention to detail, compact dimensions, the service and precision. Although the Korschenbroich-based company are not ‘splitting microns’, they currently work in the range of a few micrometres in an area of a few hundred millimetres. So, the benchmark is also less about the machining centre itself and more about the entire package, including the automation on offer.

The compact unit seems almost tailor-made

While similar machining centres with automation failed to impress G. & K. Schön, the concept with the Erowa Leonardo robot, which handles up to 24 UPC pallets in size 320 mm × 320 mm as standard, won them over right away. One of the arguments in its favour is that a loading and unloading drawer on the robot enables setup to take place in parallel to production. According to Peter Potjans, Technical Advice and Sales at Fehlmann: “Fehlmann uses Erowa, almost exclusively, for automation, as the interfaces are familiar and so there are no problems in this regard.”

Together with the machine tool, the robot forms a compact unit (multi-level

system), is intuitive to use and has an excellent price-performance ratio. “Leonardo is quick and easy to operate via touch panel control”, explains Potjans. “This solution for the workpiece range seems almost as if it was tailor-made.”

In addition to roller burnishing tools, G. & K. Schön also offers contract manufacturing as a service. Sometimes this involves very challenging workpieces. This was another reason why those responsible were pleased that the Versa 825 can handle both dynamic HSC milling and the machining of difficult-to-machine materials. Equipped with a HSK-A63 motor spindle with 20,000 rpm, 120 Nm torque and a tool changer with 44 places, it looks set to provide a basis for future tasks. However, as Klaus Schön notes, “We don’t yet know where it will lead, as the machine with the robot is not yet working to capacity. There is an increasing need for programming work on the horizon, which is essentially welcome. However, it is difficult to find well-qualified skilled workers in our region.”

The machine tool Versa was only commissioned in October 2016, and with this sort of automation, it is well-known that these bottlenecks may arise. On the other hand, employees were involved in the concept right from the start, have taken it well and according to Schön are highly motivated. What is more, the employees wanted a challenge, and so the automated solution for producing roller burnishing tools (which are always repeat parts) is regarded as altogether positive. Thus, now nothing stands in the way of the plan to use automation for unmanned production of orders through the night. ■