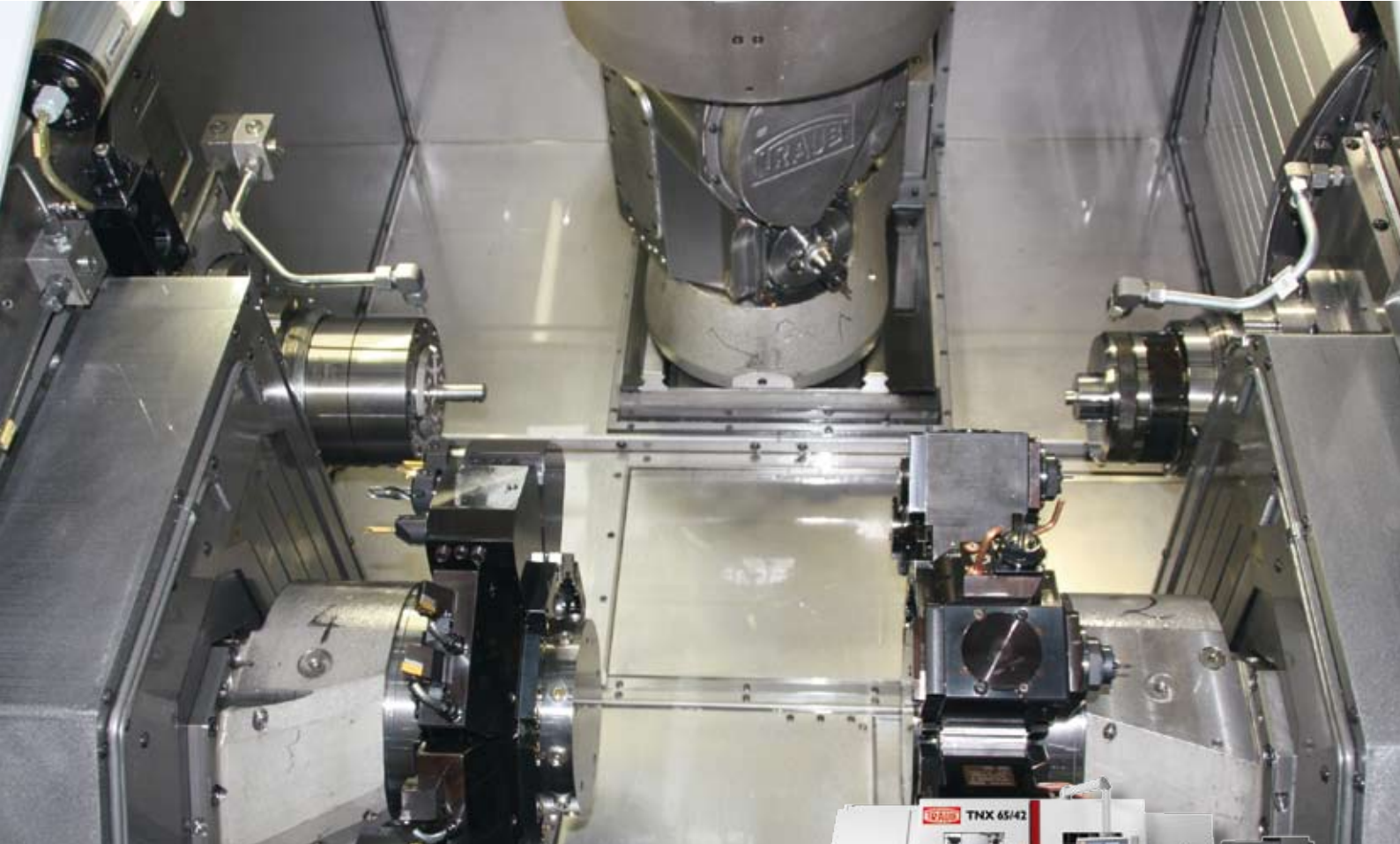


“Small, yet perfect!”



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Customer: Jowos Metalltechnik GmbH & Co. KG





Complete, off-the-bar machining requires efficient milling: The swivel spindle (left) whose B-axis runs through a $\pm 95^\circ$ swivel range in rapid traverse at 450°/s outputs 10 kW with up to 52 Nm torque and maximum 12,000 rpm; the quick change of the 80 HSK-A40 tools from the magazine takes place via a covered shaft in the work area at the top (right)

“Small, yet perfect!”

To celebrate its 50th anniversary at the end of 2010, Jowos moved to a new production plant in Seitingen, Germany. The technological highlight is a 13-axis turning/milling center from TRAUB with which increasingly complex parts can be produced quickly and precisely.

Author: Helmut Damm

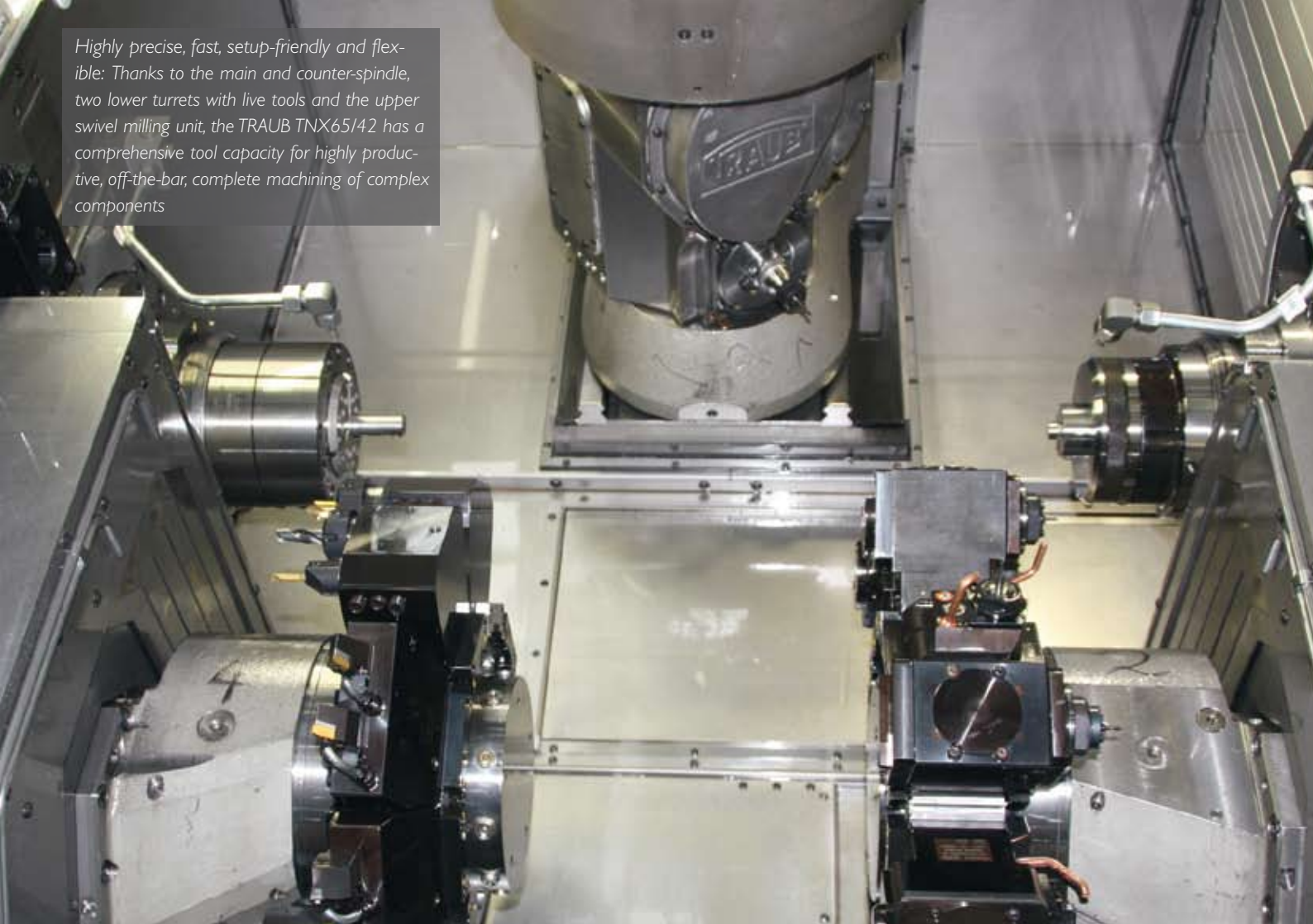
Entrepreneurs, like Josef Wolframsdorf, founder of Jowos Metalltechnik in Seitingen-Oberflacht, have helped machining flourish in Germany. The 50 years history of the successful company is almost classic: He started with a conventional parting-off machine in his basement. After constructing the first building with subsequent extension, he then bought the site of a former joinery – but his company soon outgrew the site and needed room to develop further. This all led to the construction of a new building for the 50th anniversary in 2010 – as much a liberation as well as an obligation to ensure the continued solid management

for son, Frank Wolframsdorf. He has been on board for nearly 20 years now and, since 2004, has been responsible for successfully continuing with the company his father has built up. The Jowos Metalltechnik motto has outlasted the new generation: “For us, growth is not an end in itself and size is not a preferred objective. On the contrary, it is our priority to encourage a solid customer relationship to achieve mutual prosperity. Small, yet perfect,” explains the junior boss.

Technological companions

Another constant throughout the decades has been the close technological cooperation with the Reichenbach lathe manufacturer, TRAUB. To this day, the off-the-bar turning and turning/milling of supply parts in small to medium batch sizes has been the core competence of Jowos. TRAUB has been able to provide suitable machine solutions for the majority of tasks which have presented themselves over the 50 years history. To date, Jowos has been operating eight A25 type lathes, mechanically indestructible marvels, on which special parts like nuts and washers have been produced with consistently high production volumes and an unaltered design for years. With the entry into CNC bar machining in the early nineties, there followed TNS (chuck and automatic bar lathes), TNL (fixed headstock automatic lathes), TNA (Universal lathes) and TNC (turning and milling centers) – a total of six machines with main and counter-spindles, Y-axis and live tools. Alongside the new construction, last year Jowos managed to fulfill yet another dream: It has invested in a CNC turning/milling center, type TNX65/42, and, thus, in the 13-axis complete off-the-bar machining of

Highly precise, fast, setup-friendly and flexible: Thanks to the main and counter-spindle, two lower turrets with live tools and the upper swivel milling unit, the TRAUB TNX65/42 has a comprehensive tool capacity for highly productive, off-the-bar, complete machining of complex components



complex components. Managing Director, Frank Wolframsdorf, enthuses: "Due to our range of parts we have needed this high-end machine for some time. The previous premises did not have the infrastructure to fulfill this requirement – there was a lack of floor capacity for the 10.5 t heavy and solid machine, lack of up-to-date temperature control and not enough space. Now, we have become twice as competitive, both in terms of space and technology. The complexity of components we can produce using the TNX is virtually unrestricted. This is made possible by the two lower turrets, which can both be variably used on the main and the counter-spindle, and the efficient swivel milling unit at the top, which has at its disposal 80 tools in the magazine and can work just as flexibly on both spindles. We really do have a lot in store for it!"

Cycle times reduced, accuracy class increased

With the new building and the new TNX at Jowos everything has clicked into place and all the accumulated pressure has been released. The ailing production plant was considerably costly to run with the restricted milling and tool capacities of the former lathes. The latter meant that work had to be farmed out with increasing frequency. The requirements of demanding clients, like in the medical technology with endoscopic and surgical instruments or also in mechanical engineering, placed growing pressure on the system: increasingly complex parts,

smaller batch sizes, more sophisticated materials, shorter delivery times, and lower prices. It is therefore no wonder that Jowos is now experiencing a kind of new founder spirit.

The new hall is light, friendly, clean and clearly structured. The fourteen employees are pleased with the efficient extraction systems, a state-of-the-art exhaust and recirculated air system and short distances. It is in this environment that the TNX65/42 caused a sensation right from the first day. Frank Wolframsdorf enthuses, "We are able to conduct the most complicated of milling tasks in all angles in-house, which saves us about three weeks in throughput time compared with that of outsourcing, and improves the component quality because we can completely avoid manual multiple clamping and transport. That would simply be out of the question when you're producing to within a thousandth of a millimeter. The large number of tools has consistently reduced the setup times. We have doubled up many of the turret stations so we no longer have to tool up standard processes like centering, drilling, boring, threading or grooving. Here we could even imagine triple holders with 20x receptacles. The 80 tools in the milling unit magazine play their part here, especially as we can use turning tools also. This way, up to three tools can be used at the same time, which reduces the machining times significantly. To optimize the NC programs we use the TRAUB software, WinFlexIPS, a truly first-class and intuitive aid in which all the program elements are tuned to each other. And I consider the TRAUB TX8i

control to be the best on the market. The TNX enables us to play right up there in the champions league of complete machining."



Acting perspectively, exploiting new business areas

Long-standing partnership leads to success (from left): Matthias Merkle (TRAUB Domestic Sales Manager South), Frank Wolframsdorf (Jowos Managing Director), Ralf Ziegler (INDEX/TRAUB Regional Sales Manager), and Lutz-Michael Leschewsky (Head of Sales Engineering) in front of the TNX65/42

Further advantages of the TNX: The generously dimensioned index-through space of the turrets means that even long projecting tools, 200 mm in length, can be indexed at any time collision-free. Thanks to the milling spindle, Jowos has been able to drastically reduce the number of expensive live tools and use more favorable standard milling cutters instead. Today, inclined boring, which requires a great deal of alignment with live tools, is set up quickly and precisely using B-axis programming. By simply swiveling, one and the same turning tool can be used on the main and counter-spindles. One of the two lower turrets can be used as a tailstock or provided with a steady, so that slim components can also be produced reliably. Jowos has also chosen a TRAUB bar loader which not only works smoothly in combination, but, with differing diameters, also ensures a safe guide of the bars even at high speeds. Jowos has also used oil as a cooling lubricant in all the CNC machines. This protects the machines, prolongs their life cycle and improves the surface quality. For Frank Wolframsdorf, the TNX has opened up a new perspective scope in an environment of more increasingly complex components with greater demand for accuracy. There certainly isn't any shortage of

work for a double-shift capacity. There is, however, currently a lack of qualified employees. This is why, for the first time in 15 years, an apprentice is to be taken on to embark on a varied occupation with a future in a state-of-the-art environment.

Getting it together again ...

It hasn't taken long to notch up positive results from the investment in the TNX65/42: "In the first few weeks we received lots of enquiries, which, in light of the relocation, we have not been able to meet fully. However, our calculations have shown that we are once again unreservedly competitive," explains Frank Wolframsdorf.

Too hot to be shown completely: sections of components as they are produced at Jowos (in this or a similar way)





One of currently 15 TRAUB machines in the Jowos Metalltechnik repertoire:
 A TND300 in 1990 marked the introduction to CNC technology.
 The TNS26DGY shown here followed as number two in 1992



Mechanics – pure and indestructible: Eight A25 type lathes stoically perform their duty at Jowos in Seitingen; the continuous-running machines perform the classic bread-and-butter business with simple bulk parts

Users

With currently 14 employees, Jowos Metalltechnik manufactures completely machined turning and milling parts for medical technology, the electrical industry, engine construction and mechanical engineering, the wholesale trade and the automotive industry.

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