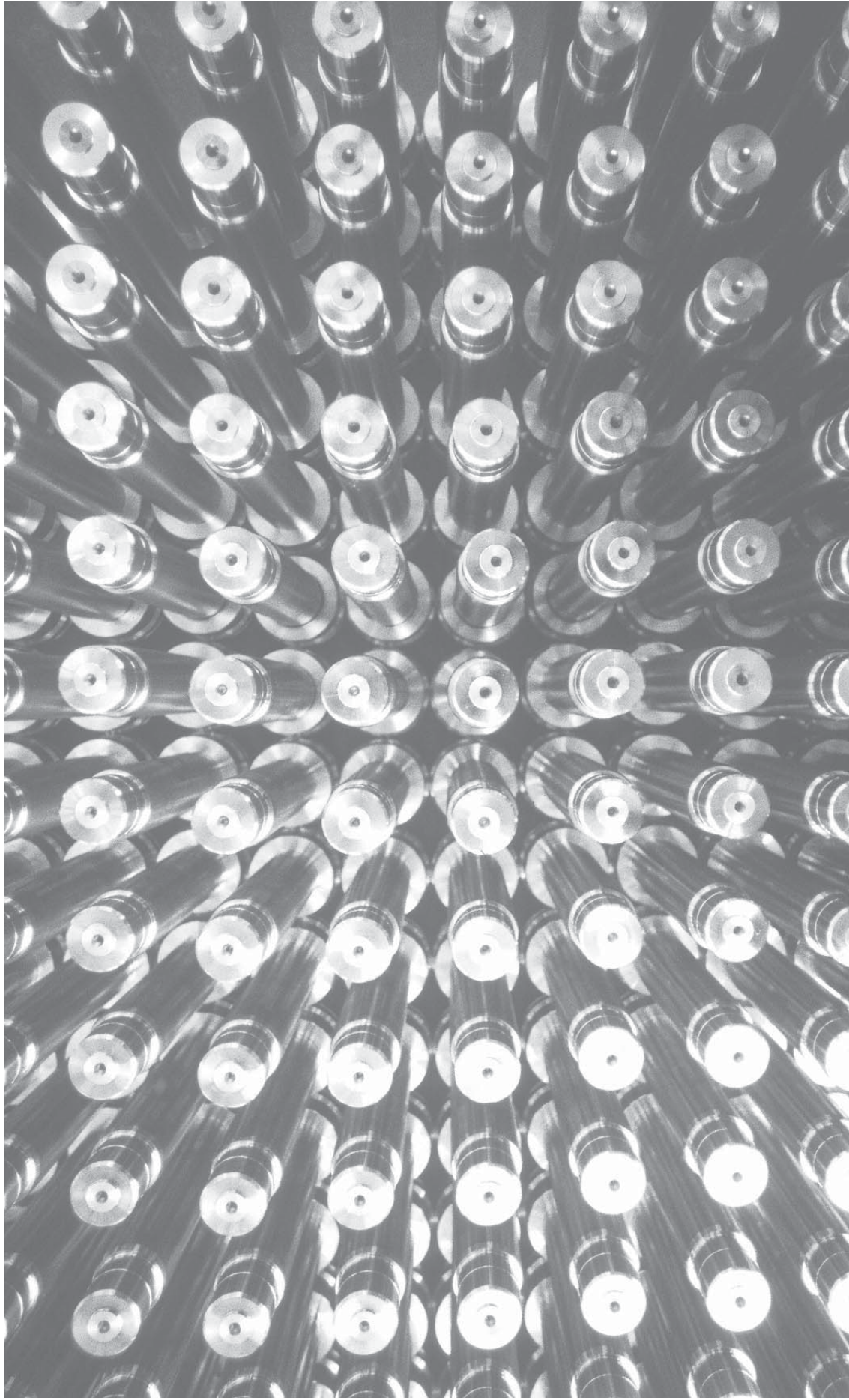


**G200 still the
technological
leader after
15 years**



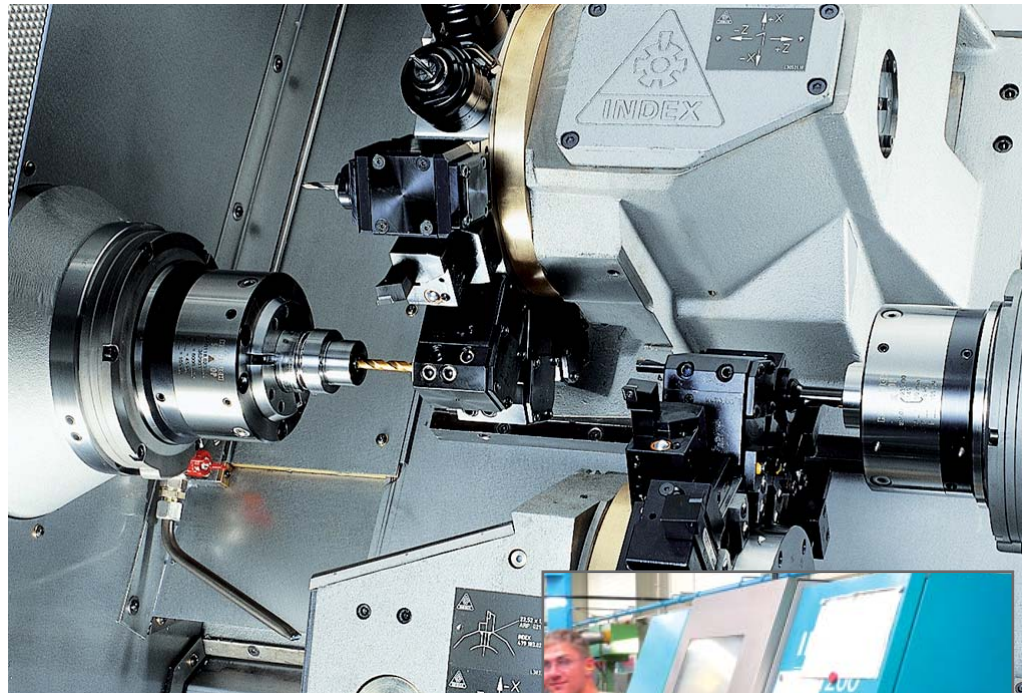
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G200 RatioLine still the technological leader after 15 years

At König Maschinenbau, turning machines of the type G200 from INDEX have been in use since 1995. The number of machines of the same type in use has grown to seven over the years and the big advantage of this is the careful but effective product maintenance that has been carried out in the background over the years. At machines that are practically the same, both NC programs and machine operators can be switched between machines without any problems.



In Wertheim, Wilhelm König Maschinenbau GmbH, which was founded in 1947, produces clamping equipment and hydraulic devices according to customer requirements or specifications, with 247 employees. Horst König, the third generation of managing partners: 'We don't have any catalogue products. Instead, we constantly adapt to the needs and requirements of our customers anew. We produce two product groups that are virtually of the same strength. Firstly, we supply clamping tools of high quality and with a very user-specific design. Secondly, we produce complete hydraulic devices that we produce, assemble in-house and test before delivery. When someone orders a clamping tool from us, it's like going to a master tailor and ordering a tailor-made suit. It hangs beautifully, in short, it's a perfect fit.'

Quality is our overriding concern

At König, quality is the benchmark for everything else. This applies both for the product group clamping mandrels with which depending on the application concentricity precision of up to 0.002 and better is reached as well as for mobile and stationary hydraulic devices, some of which are shipped for TÜV testing at the customer's premises. All the state-of-the-art machinery is of impressive quality. The company's rigorously implemented philosophy is basically only to procure machines from leading European manufacturers. In the turning sector, primarily INDEX turning machines have been in use for many years. Horst König: 'Our oldest INDEX lady is a GU 1500, built in 1981, so a real oldie: That this machine is still in operation today bears testimony to the quality from INDEX. The machine still processes parts reliably today in two shifts. 'The first NC machine at König was an INDEX G 65. This was followed in the second half of the 1970s by an INDEX GE 42.

The first of a total of seven INDEX G200 turning centres that is

used at König Maschinenbau for the serial production of parts for clamping mandrels and hydraulic devices still looks like new, even after 13 years

For the serial production of turned parts, the first of a total of four INDEX G200C turning centres was procured in 1995 - a machine from the RatioLine series, from the modular system of which the client can compile precisely the machine that he or she requires for his/her production task. The front and rear sides of complex parts with secondary forming such as drilling, milling and tapped cross cutting are produced entirely on these machines at König through simultaneous processing on the main and counter spindles with high quality standards (tolerance fields 10 to 15 µm despite off-the-peg production) using driven tools with a high degree of productivity. The options of an Y/B axis in the G200 are not used at König.

Flexible with seven machines of the same type

Through expansions in capacity due to growth and the good experience with the INDEX G200, three other machines of the same type were added over the course of the years. Horst König: 'It has been shown that we are substantially more flexible in the deployment of our employees and with regard to parts production when the same type of machine is procured again.' The advantage is obvious. Of the seven G200 machines that are now in use at König Maschinenbau, there almost always happens to be one machine free that can be converted to processing a new part.

And because all tools fit on all G200 machines, changeover time and costs are saved. With a set of workpiece holders for a particular part, the setter can optionally go to all seven machines. If he or she had to produce the workpiece on another type of machine, from experience, the driven tool does not fit, other receptacles are needed or the alignment features are different. The advantage of identical machines also applies for the three INDEX G200 machines of the second generation with dynamics packages that were added at König from 2006 onwards. With the dynamics package of the new control generation INDEX 200-4D Powerline, acceleration values have doubled, rapid traverses have become up to 50% faster and non-productive times have halved, without affecting flexibility and power density. And the doubling of the computational contour precision is contributing to a further increase in quality. According to Joachim Klein, production manager of the turning shop, due to the faster processor with double cycle frequency and double SPS speed in the control, part of the G200 D machine comes down approx. 5 to 7% faster than on existing machines with the existing control system, without changing the program. Because the working space of the newer G200 has remained the same, the existing NC programs also ran again without great effort after one run via a new post-processor when the changeover to the new control unit was done. Another benefit: Despite the new control generation, nothing has changed for the setter at the machine and the machine operator for the lower part of the operating panel, the machine control panel, has always remained the same up to today for all INDEX machines. Every operator thus knows where the feed or speed override is, how the axis is moved and where correction values can be entered. Incidentally, this applies for all machines from the INDEX supply program, with which it is virtually standardised where important operating elements are arranged. As has been the norm in the automotive manuf-



Some examples of clamping mandrels that are completely machined on the INDEX G200 CNC turning centres

acturing sector for a long time. At König, NC programs are created at an INDEX programming desk because the machine would stand idle too long with workshop programming. Furthermore, specially trained personnel would then be needed at each machine for this. The programmers at König welcome the support from the INDEX proposal office when something on the machine needs to be optimised for new parts or new tools.

Advantageous product maintenance

The careful product maintenance that has been done in the background at INDEX with the G200 since the first time it was presented 15 years ago is rated very highly. Horst König: 'Compared with other manufacturers, we would undoubtedly have had a second or even third machine over the same period and these would have scarcely been comparable with the first.' We would thus have had a substantially larger diversity of types in our company and an increased need for training among our staff. And everything that that

entails would have had to be available two- or threefold.' Joachim Klein, Production Manager Turning Shop: 'We also estimate that practically no competitor of INDEX uses such a high proportion of VA sheet metal in the interior. That INDEX machines still keep their paint even after years of service, I see as a great advantage. The machine cladding with VA steel sheets in heavy-duty areas is also very beneficial. My only request to INDEX would be a new design.'

Actually a request that is rather difficult to understand when you take a look at the comprehensive machinery of the INDEX turning machine G200 at König. Even after 13 years, they still all almost look like new.

Incidentally, for individual and serial production, König has equipped itself with Traub turning machines of the type TNA400 and TNA700 that, in accordance with their philosophy as universal machines are even more flexible in handling with small batch sizes than the G200 turning centres.

Economic outlook

As almost everywhere, there were substantial growth rates last year at König Maschinenbau too. Horst König: 'The current economic climates gives us great hopes for the future. With both product groups, clamping mandrels and hydraulic devices, we are expecting substantial additional increases. To take this into account, we built a new production hall with 1500 m² of floor space last year which we will be moving into this year.'



From left: Joachim Klein, Production Manager Turning Shop; Karl-Heinz Ziegler, Area Sales Manager INDEX TRAUB; Horst König, Managing Partner of Wilhelm König Maschinenbau GmbH and Michael Czudaj, Sales Manager INDEX TRAUB Germany

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