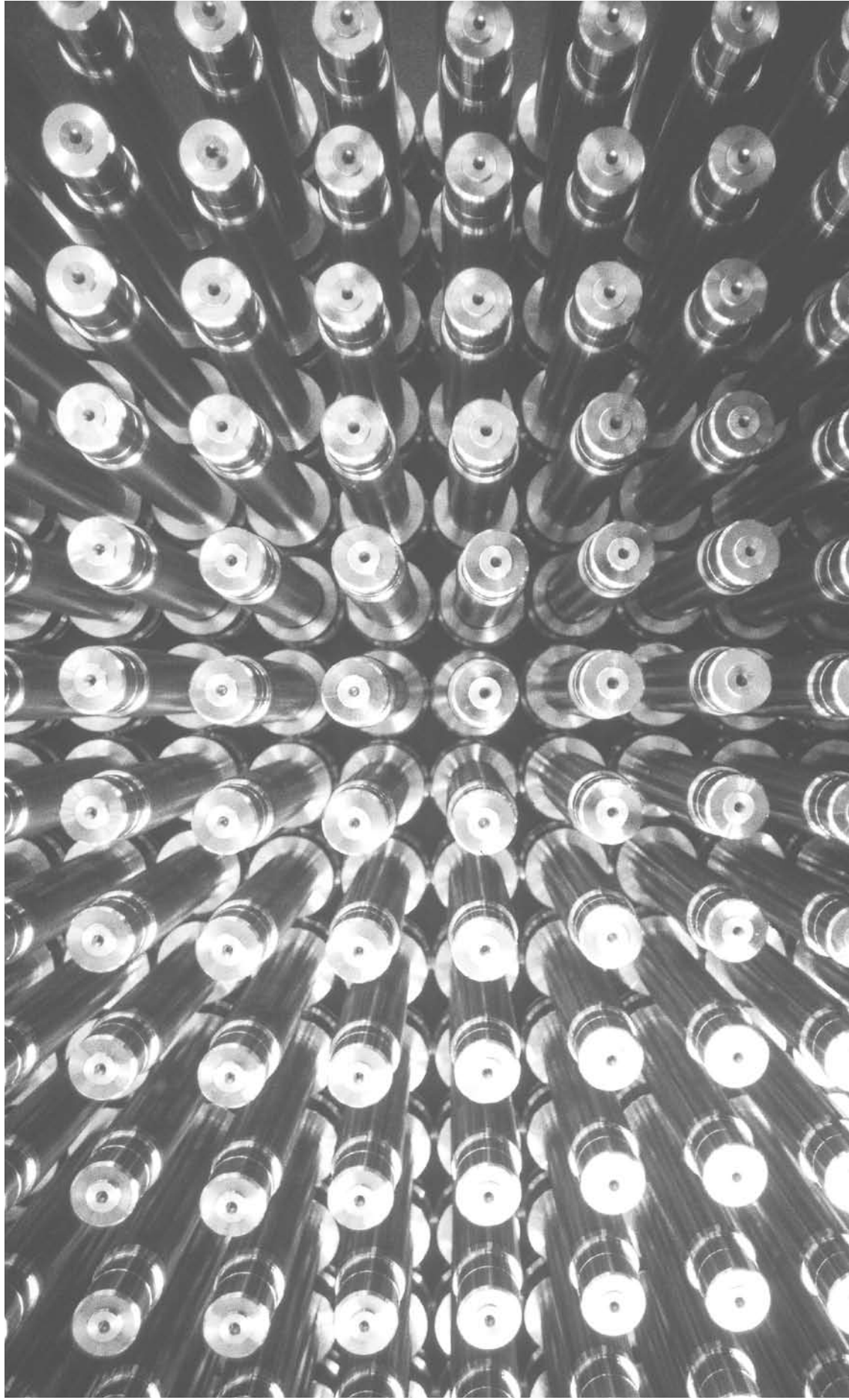


Precisely Planned Success

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Precisely Planned Success

Quality manufacturing equipment assures precision and productivity

There are many paths to success – at Lauble GmbH, respected manufacturer of precision turned parts, they include a qualified, dedicated workforce, an optimized production structure with appropriate peripherals, and modern machinery, including 22 CNC machines. Among these is a Fancu-controlled ABC automatic production lathe by INDEX, installed in July 2008. Anyone visiting the Lauble GmbH production shop in Dunningen sees immediately that precision work is the norm here. A total of 22 CNC automatic lathes are lined up in orderly fashion; in the midst of the chip removal – and separated only by a large glass panel – are the foremen's offices and the inspection room. The equipment and transparency point to a very modern contract manufacturer that places great value on perfect organization and modern machinery.



Lauble GmbH is a prime example of a family-owned business. In 1965, Wilhelm Lauble founded the company of the same name, which with the support of his wife and subsequently his children established a good reputation as a manufacturer of turned parts. In 1990, son Guenther Lauble and daughter Sonja Auber rose to the ranks of the company's management board. Today, the founder's grandchildren, Sascha and Timo Auber, are also partners in the firm. They exercise their responsibilities for production with a high level of dedication and knowledge and many years of experience.

Executive Director Guenther Lauble describes the strengths of his company: "We specialize in precision turned parts ranging from 2 to 250 mm diameter for use in a wide range of industries, including applications in mechanical engineering, control engineering, precision and electrical engineering, and medical engineering. In so doing, we are able to meet the most stringent requirements for precision and surface quality while performing additional tasks such as assembly and component fabrication." Sascha Auber, who shares responsibility for the production organization, added: "In recent years we have optimized our processes significantly. This laid the groundwork for the high degree of flexibility that is reflected in our rapid, precise quotations and short setup times. This is especially important for small quantities – and we offer batch sizes starting as low as 500 units and up. Combined with our three-shift operation, our optimized organization is a cornerstone of our success."

Among other things, Lauble GmbH has recently invested in modern peripherals: the latest measuring equipment, an automatic small parts store that supplies tools via barcode, a PPC system including PDA/MDA as well as radio DNC, which

Since July 2008, the Fancu-controlled ABC automatic production lathe has been in operation at Lauble

supplies the required NC programs to all machines. Those in charge agree that well-equipped machinery alone does not produce a profitable company.

Nevertheless, the machinery is an important element on which Guenther Lauble does not compromise: "Our machinery must exhibit high-performance and be equipped with quality components throughout. We only incorporate machine tools into our production process if they are easy to maintain, are backed by unparalleled service by the original manufacturer, and will continue to perform well after a couple of years in operation."

The lathe manufacturer INDEX of Esslingen is a primary partner for machinery. The very first machine acquired by Lauble senior was a used automatic contouring machine made by INDEX. Lauble also ventured into the CNC era with the help of the Esslingen-based company. In 1996, the company invested in an ABC series automatic production lathe, a CNC-controlled machine, which according to Guenther Lauble "was almost as fast as a contouring machine, but significantly more flexible. Back then the complex parts we produced on our lathes at the time always required rework on machining centers. The new ABC automatic lathes enabled cross-machining and reverse-side machining, which eliminated the need for multiple rechucking operations. Machining became more productive and the machining results improved in terms of quality."

The INDEX ABC automatic production lathe is just as suitable for simple automatic turned parts as for complex CNC



Impressive view of the production shop: automatic lathes laid out in an orderly fashion and a perfect production structure



The INDEX ABC automatic production lathe is suitable for complete machining of complex parts. Its ability to engage up to 3 tools simultaneously ensures high productivity levels

turned parts. Likewise, its design is equally suitable for bars as well as chucked parts. The steel machine frame supports a cast inclined bed with two independent turrets. This design provides excellent damping and, thus, the best conditions for precision work. Another impressive feature of the design is the maximum degree of stiffness it provides against bending and torsion. Guenther Lauble offered an example of the level of precision that can be achieved: "With the INDEX ABC machines, we can achieve precisions within standard tolerance IT6. However, the machine alone is not responsible for this," he added winking, "the know-how of the operators also plays a role."

The upper turret is used preferentially for internal machining, and the lower turret for external machining. Up to five back-boring stations round out the tool system for complete reverse-side machining. These tool stations, which are positioned above the main spindle, are operated by a synchronous spindle located in a fixed station in the upper turret. This makes it particularly effective, emphasized Werner Gross, Regional Sales Director for INDEX: "Because the integrated workpiece spindle lies on the reference circle of three reverse-side quills, it is possible to use the upper turret to apply two tools to two workpieces during machining. In other words, while the next workpiece is being center-turned or center-drilled with the



Lauble manufactures precision turned parts ranging from 2 to 250 mm Diameter. The INDEX ABC produces high-precision short turned parts with diameters up to 65 mm



Guenter Lauble, Sascha and Timo Auber (from left) in front of the INDEX ABC with Fanuc CNC control: Optimized production structures and modern machinery are top priority



Guenter Lauble, Sascha and Timo Auber have cultivated a long-standing, collaborative relationship with lathe manufacturer INDEX and have a highly qualified partner in Regional Sales Director Werner Gross (right)

main spindle, the reverse-side machining of the just finished part occurs with the synchronous spindle simultaneously and with the same motion on the center quills." At the same time, the workpiece in the main spindle can also be machined with the second, lower turret. Thus, with clever planning two workpieces are constantly engaged by three tools, which minimizes the production time per unit and increases productivity significantly.

These features have impressed Lauble in Dunningen in every aspect. As a result, Lauble has a total of nine ABC automatic lathes in its production shop, the last of which was installed in July 2008. This machine is also somewhat special because it was one of the first INDEX machines to be equipped with a Fanuc Series 31i CNC control.

For the past 13 years, Timo Auber, ABC specialist at Lauble, has been involved with programming and other aspects of these machines on practically a daily basis. He explained: "We are pleased that INDEX now offers an additional control system provider in Fanuc. We have worked with INDEX machines for a long time, but we also have over 12 years of experience working with Fanuc controls, which are mainly found on our sliding headstock automatic lathes. These CNC controls are extremely reliable and easy-to-operate."

Therefore, integration of the new Fanuc-controlled ABC into the production process did not present any problem for Timo Auber. "The machine was installed and set up and ran perfectly from the very first moment. In addition, our employees could operate the machine in minimum time without a great deal of prior knowledge", praised Timo Auber.

In 2008, INDEX began equipping its automatic production lathes in the SpeedLine series with Fanuc CNC controls – machines from the ABC and C100 series. Werner Gross

argued: "There are many machine operators around the world that are most familiar with Fanuc controls. This is exactly the group we want to appeal to. That is why we have set up these machines to be 'as Fanuc as possible.' Because of the familiar Fanuc 'look & feel' and the typical Fanuc user interface, users will be able to start working immediately without time-consuming training."

The Fanuc Series 31i CNC control was chosen in keeping with the sophisticated technology of the ABC automatic production lathe. A decisive consideration was the fact that the upper turret features not only tool stations but also a fixed position for the synchronous spindle. As a result, it must be pos-



Precision that passes every test – at Lauble all important dimensions are checked and documented

sible to switch between tool machining functions and spindle functions using the same drive. Moreover, functions such as 'polygon turning' are required as are advanced functionalities of the tool drives, spindle, and synchronous spindle. These are available in the Series 31i CNC and were customized by Fanuc application engineers to the INDEX machines.

The ABC also benefits from the typical strengths of Fanuc controls such as the ability to obtain spare parts anywhere in the world for the life of the control and its maximum degree of reliability. This was confirmed by Guenther Lauble: "We have not yet required a service technician to replace control-related parts for our Fanuc-controlled machines. The Fanuc CNC controls and drives are absolutely reliable. This is especially critical to us as a contract manufacturer, because machine availability is all-important to our business." Reliability of components, which is reflected in high machine availability, is one of the most important features for Sascha Auber: "We go to great lengths to harmonize the machinery with the overall production structure. That only works if we can rely 100% on the individual components. With Fanuc controls, our experience has been only positive to date. This was also an important reason why we selected the INDEX ABC automatic lathe with Fanuc control."

Another integral component of the Lauble concept is the ability to measure the high level of precision achieved during machining. For this reason, an inspection room was set up near the production area where all tests are performed. This room contains a 3-D coordinate measuring instrument as well as an optical wave measuring system, devices for cylinder-shape and circular-shape tests, and many other measuring instruments. Guenther Lauble explained: "While other companies have the production resources to produce complex parts, they cannot measure the precision because they lack the equipment. We don't want to just rely on the machine and our gut instincts."

This strategy has paid off so far. Most of their clients have been with them for more than 10 years. For a dedicated contract manufacturer, which is positioned at the end of the production chain, these long-term relationships are a tremendous source of security. Still, Guenther Lauble knows that performance and price must always be in sync: "We must always be one idea ahead – faster, better, more flexible." That is why he is happy that his nephews are by his side in this endeavor. Timo and Sascha Auber have production matters completely under control. They write all of the programs themselves – offline of course to keep from interrupting valuable production time – they also take care of tool purchasing, which often involves trials with new tools. They take part in seminars and training sessions to enhance their education and always have their finger on the pulse of the market. In addition, they also look after the in-house training. Since 2001, Lauble has employed two trainees every year, who not only learn the technical tools of the trade but also take in the corporate philosophy. The management board is proud of its employees,

90 percent of which are skilled workers: "The average age of our workforce is barely 30 years old. Our employees are very dedicated and their experience makes them a critical pillar of our organization, just like our machinery and peripherals."

Lauble GmbH

Precision turned parts

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