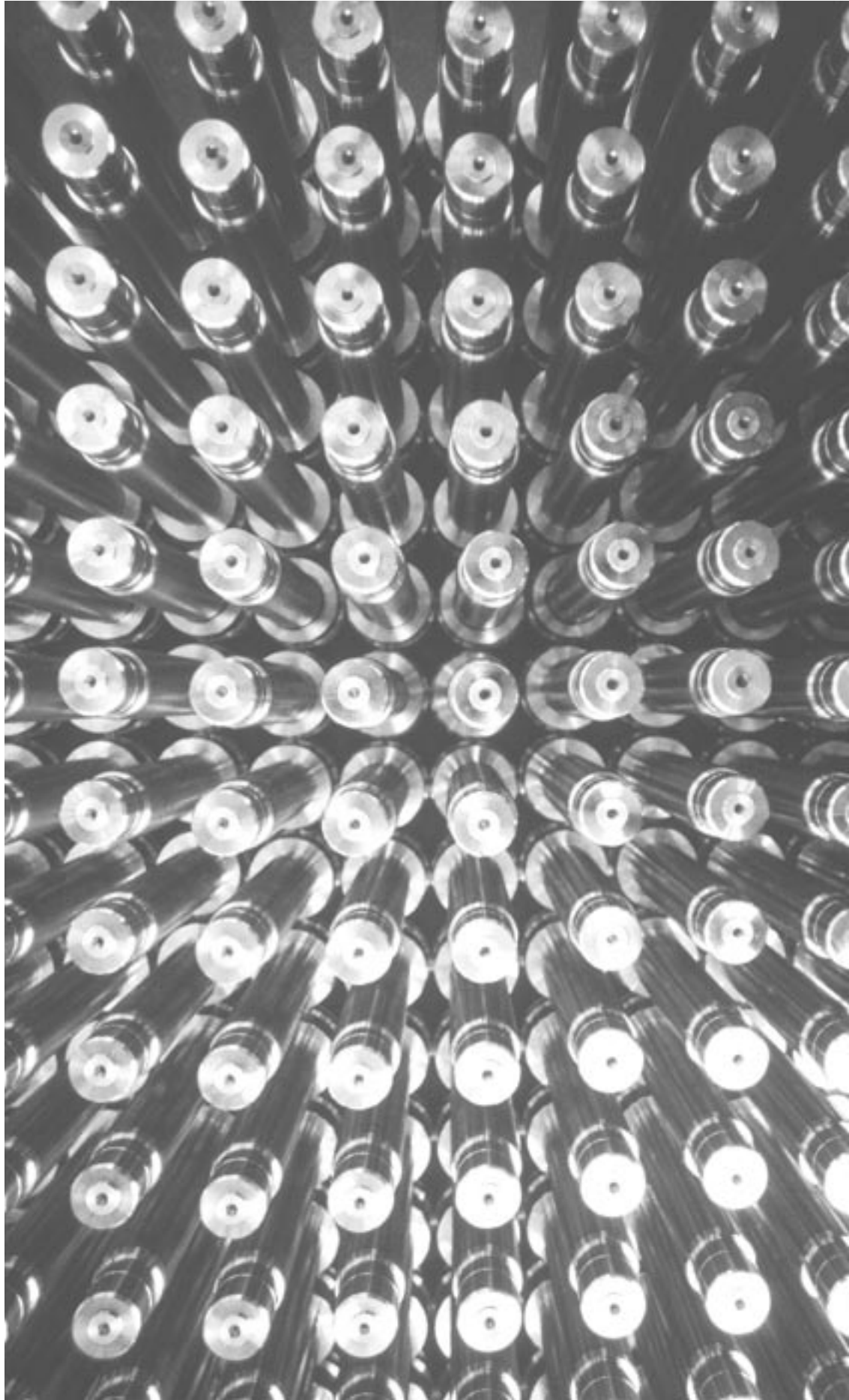


## High Quality Machines through Synchronized Flow Assembly



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# Synchronized Flow Assembly - For the Production of High Quality Machines at Low Cost

**With the new automatic lathe MS22C lean, INDEX proves that it is possible to produce workpieces of low to medium complexity at competitive costs even in high-wage countries provided that appropriate machines are used. At the Deizisau site, the MS22C lean is manufactured on synchronized assembly lines at low cost in the high INDEX quality as it is known all over the world.**

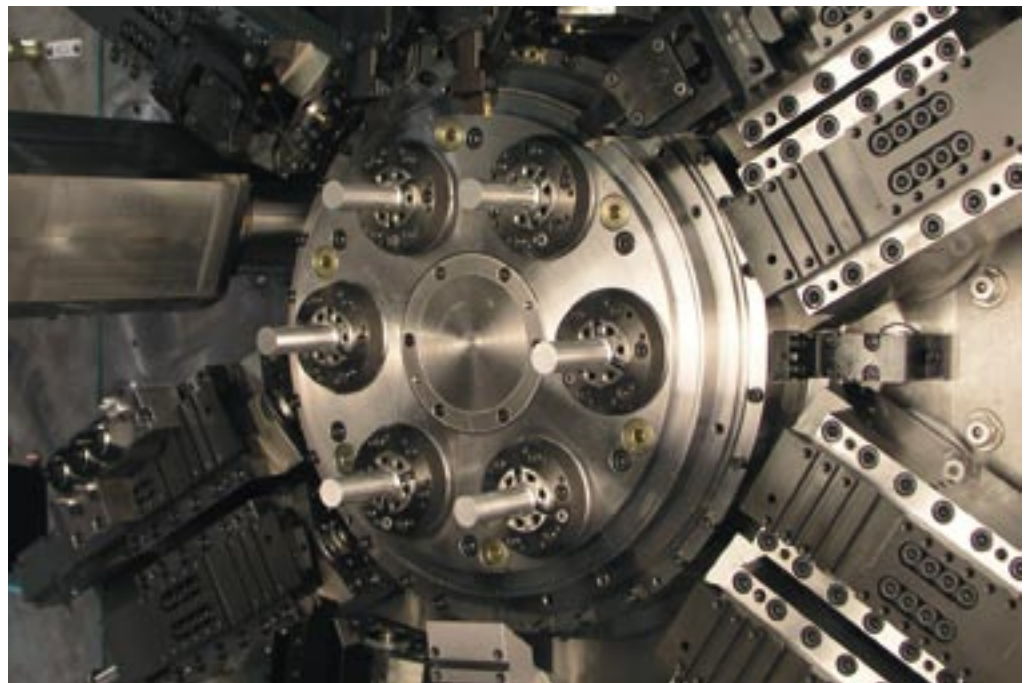
Author: Wolfgang Fottner

Workpieces of low to medium complexity are manufactured by cam-controlled multi-spindle lathes, simple sliding headstock lathes and fixed headstock CNC lathes, and only rarely by CNC multi-spindle automatics. A machine concept covering this range of workpieces and combining the known advantages of the INDEX CNC multi-spindle automatics (in open front version) and a minimization of machine investment cost, has not existed on the market up to now. The recently presented INDEX MS22C lean, including a predefined equipment range and a predefined set of additional components for machine extension, bridges this gap in the market. The modular strategy that has proved its value over many years allows to realize a second version of this new machine type MS22C. This version includes all INDEX options already known such as Y axes, feeding units and special equipment. The new MS22C lean is intended as an alternative or to replace highly equipped cam-controlled multi-spindle lathes. It allows cycle times that can be compared to those of cam-controlled multi-spindle machines and is intended for use with medium lot sizes (from approx. 5 000 parts for repeated orders). This is made pos-

sible by the open front design that ensures easy access for setup.

## Combining CNC and cam-controlled machines

Workpieces of difficult materials requiring very complex processes can also be machined on the MS22C lean that combines the speed of a cam machine with the flexibility, easy setup and all advantages provided by advanced CNC technology. In addition, this machine is capable of performing all applications and technologies known from the INDEX multi-spindle series and may also be retrofitted at a later date.



*The working area of the MS22C lean*



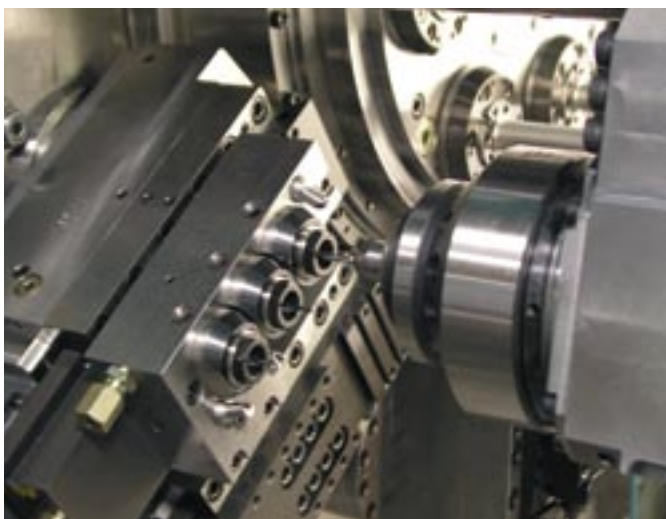
*The Deizisau site of INDEX is the center for manufacturing and assembly of CNC multi-spindle automatics*

### **Federal President Köhler complements the company on its exemplary staff and training concept**

INDEX banks on Germany as production location and produces certain important core components also on its own machines. Motivated and perfectly trained employees ensure the high quality of the machines, each one reflecting their diligence and attention to detail. The staff are encouraged by the company and receive further education. INDEX invests a lot in the training of young employees, achieving a training rate of about six percent which is remarkable for a medium-sized company. In order to remain competitive, INDEX focuses on flexible production strategies. After the positive experiences made on the Deizisau site, flow assembly lines have been implemented on other production sites, too. Market-leading, high quality products are the best foundation for sustained growth. Federal President Horst Köhler took the time to visit the INDEX plants in Deizisau where he could personally verify the information provided by the company. He particularly singled out for praise the commitment of INDEX and TRAUB with respect to staff training. On a tour through the assembly plant, the head of state convinced himself of the excellent performance and know-how shown by INDEX in the production of multispindle automatics. The central subassembly of the INDEX multispindle concept is the headstock. It serves the purpose of housing both the spindle drum with the motor spindles and the compound slides with their respective axes.

### **Synchronized assembly for more quality**

Assembly of all headstocks of the multispindle series MS18, MS32 and MS52 is performed on a synchronized assembly line composed of seven stations. The first three



*Backworking with the MS22C lean using three tools*



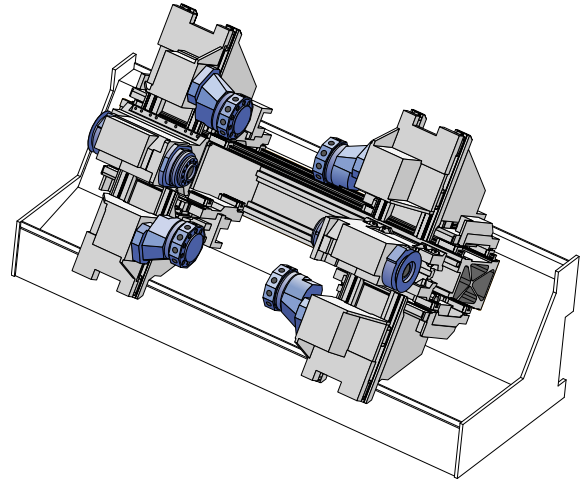
***During his speech, F. Pres. Horst Köhler singled out for praise the exemplary commitment of INDEX and TRAUB with respect to staff training***

stations are used for assembling the basic elements, the other four stations are intended for customized equipment of the headstock. Although synchronized assembly seems to be rather atypical for headstocks of multispindle automatics (considering that there are eight different types of headstocks, passing over the line in an arbitrary mix), it offers decisive advantages for this application. The scope of work is divided according to functional and logistical aspects in order to achieve a largely uniform utilization of the different stations. The INDEX group is particularly strong in the development of the optimal solution for the current application. Together with its subsidiary TRAUB, the group offers the largest program for complete machining of turned parts, both for serial and single-item production. The company TRAUB Drehmaschinen GmbH & Co. KG, Reichenbach/Fils, that is part of the group since 1997, focuses on the development and manufacture of universal turning centers, sliding headstock and fixed headstock automatics and turn-mill centers.

### **GLOBAL PLAYER IN THE AUTOMATIC LATHE SECTOR**

INDEX is one of the largest leading manufacturers of automatic lathes. The company was founded in 1914 and is active all over the world. It aims at responding to changing market requirements rapidly and in an innovative manner. Quality, reliability and technical prominence are reflected in the high quality product range and the comprehensive services offered. With 2 342 employees all over the world, the INDEX group achieved in 2005 a consolidated turnover of about 370 million Euro.

The new series of machines with the turn-mill center TNX65/42 has particularly outstanding features. These machines allow simultaneous, independent machining with up to four tool carriers. The main spindles and counter spindles of identical design are provided with liquid-cooled hybrid bearings for long service life. A maximum of 40 VDI30 tool stations allow multiple equipment with up to 80 tools. All turrets have powerful tool drives with a power of 5.8 kW (25%). All tool carriers can be equipped with a Y axis. Large roller guides in all linear axes, large distances between the supports and the high rigidity of the machine allow powerful machining. The TRAUB machine concept enables simultaneous and independent machining of the workpiece by using three workpieces, not only at the main spindle but also at the counter spindle. The 3D collision control function of the completely new TRAUB control TX8i-s helps avoid costly machine downtimes due to improper set-up of the machine or programming errors. Thanks to the upward compatibility of the TX8 control series, it is also possible to use older programs with the TX8i-s.



*40 VDI30 tool stations with up to 80 tools provide maximum efficiency on the new TRAUB TNX65/42*

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