

TURNINGpoint

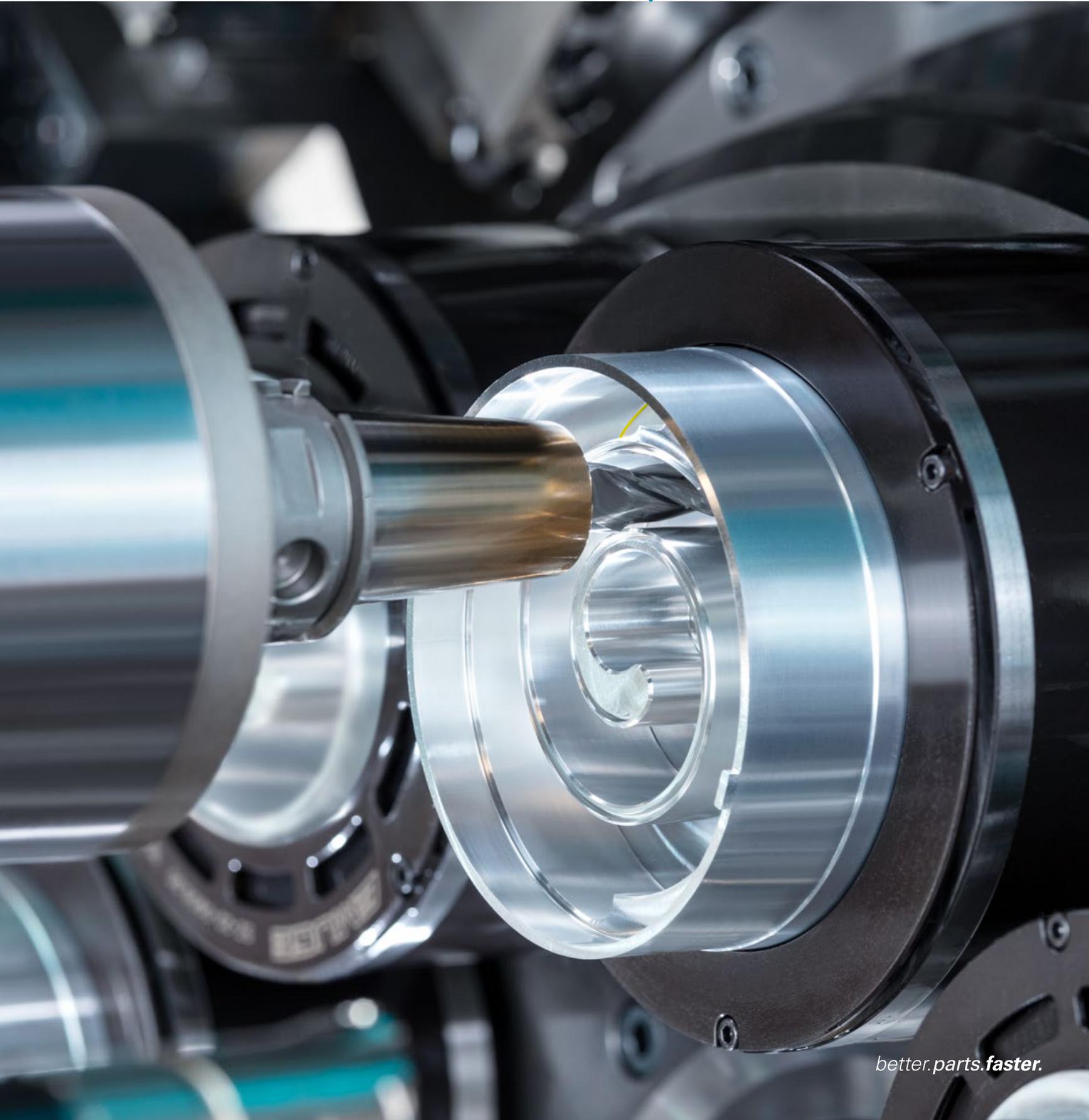




Photo: Linde

Highlights

Productive manufacturing solutions

Best performance at the smallest footprint—
the new TRAUB TNL32 compact **04**

More than 500 tools for the milling spindle—
INDEX iXtools for turn-mill centers **12**

New products and innovations for:
our universal lathes—now also available in
long version and with more tools **18 / 44**

Innovative technologies

Partnership with the customer—working
together towards ideal production solutions
INDEX setup **20**

Everything revolves around the scroll—
Efficient scroll compressor production on the
INDEX MS40-8 multi-spindle automatic lathe **28**

Mastering processes—
a technological partnership with Paul Horn **42**

Successful together

In medical technology only the best is good enough—
the Elos Medtech Group in Gørløse/Denmark
swears by TRAUB's sliding headstock lathes **08**

Gear components for premium forklifts—
Linde Pohony manufactures driving and steering axles
using INDEX G420 turn-mill centers **14**

High-volume production to customer requirements—
visiting one of the leading suppliers of turned parts
in Scandinavia REA in Otterup **32**

Tradition and modernity—
Adrien Riquier specializes in turned parts
for installation requirements **38**



Dr. Dirk Prust, Reiner Hammerl and Harald Klaiber
INDEX Group executive management (from left to right)

Dear customers and friends of the company,

“Not as bad as feared”—it was in these terms that Christine Lagarde, the President of the European Central Bank, aptly summed up the general mood in the economy at the World Economic Forum (WEF) in January.

There also could hardly be any better way to describe the situation in the area of machining. While the expected slow-down in business did occur, there is no far-reaching crisis to speak of at this moment in time. The feared shortage of energy never came about and supply chains are gradually relaxing. Nevertheless, the sharp rise in costs coupled with a global skilled labor shortage presents a tremendous challenge to remain competitive in the manufacturing industry. Against this backdrop, increases in productivity and longer machine run times achieved through automation, using the same number of staff or even less, is gaining even greater importance—and particularly so with shrinking batch sizes and increasing diversity of variants.

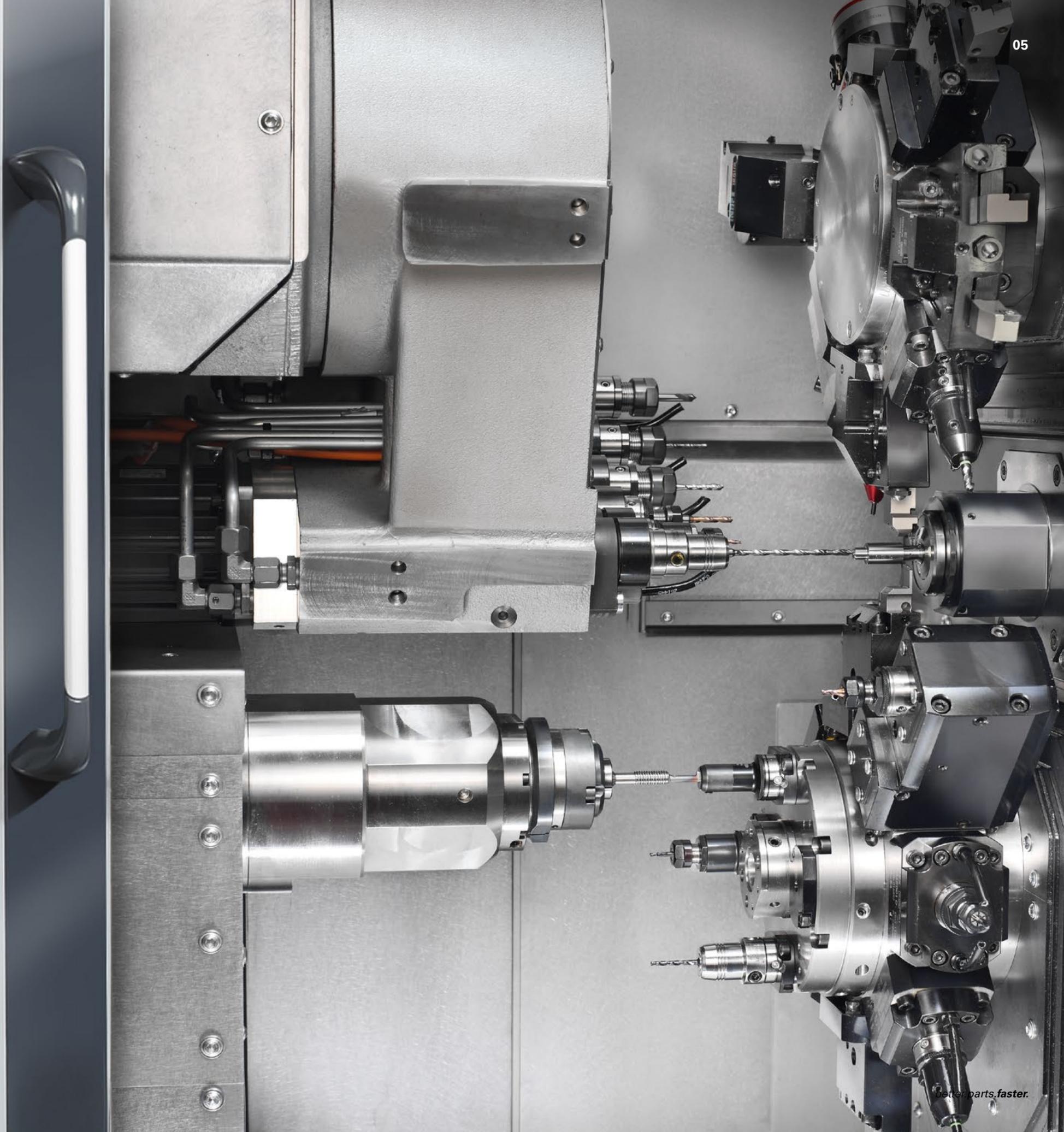
In this increasingly competitive environment, setting the right course in terms of investments will be decisive to prepare for the expected up-turn in business. We've set the focus accordingly when developing our new products to be launched at the EMO 2023:

- ▶ The option to extend the tool storage in our INDEX G series turn-mill centers by up to 392 tools using our additional tool magazine INDEX iXtools lets us lay the groundwork for significant reductions in setup times and a high degree of flexibility.
- ▶ The many use cases for our INDEX iXcenter robot cell have now been further enhanced with the ability to use it with the TRAUB TNX220 turn-mill center.
- ▶ The launch of the new sliding/fixed headstock automatic lathe TRAUB TNL32 compact, which provides the performance of a machine with a spindle clearance of 32 mm at a considerably smaller footprint than was previously the case.
- ▶ Not to forget the new technological approaches that we will be showing at the EMO 2023. Among which we would particularly like to highlight the first time a scroll compressor is machined on an INDEX MS40-8 CNC multi-spindle lathe.

Don't miss out on our latest news! We look forward to your visit and to discussing with you in person. **X**

Best performance at the smallest footprint

Is available production area a valuable asset to you? Then, we recommend our new sliding/fixed headstock automatic lathe **TRAUB TNL32 compact**. Its work area—which is unique in its class—and its compact installation dimensions guarantee a huge power density and thus a particularly efficient production.





When fully equipped, the TRAUB TNL32 compact sliding/fixed headstock automatic lathe combines the productivity of a very high-performance automatic lathe with the ability to produce even the most demanding workpieces accurately and economically. This is ideal for many components used in medical technology, hydraulics/pneumatics, electrical engineering, optics, mechanical engineering, and the automotive industry.

Lutz-Michael Leschewsky
Sales for single spindle automatic lathe technology at INDEX

Sliding/fixed headstock automatic lathe TRAUB TNL32 compact

As the name suggests, our new TRAUB TNL32 compact has a smaller footprint than the successful TNL32. Its width has been reduced by 1,120 mm, giving the compact sliding/fixed headstock automatic lathe essentially the same footprint as the TRAUB TNL20. Its chip conveyors and cooling unit also require less space.

Despite its size, the TNL32 compact comes very close to the TRAUB TNL32 in terms of working area dimensions. The Z stroke of the main spindle is 220 mm when performing sliding headstock turning—as opposed to 305 mm for the TRAUB TNL32. This ensures smooth bar movement—a clear advantage.

The main and counter spindles, which are identical motorized spindles, no doubt make for one of the strengths of the TRAUB TNL32 compact. They feature a high dynamic response, which is reflected in a 20 percent shorter ramp-up time to the maximum speed of 8,000 rpm compared to the first generation TRAUB TNL32. Hydraulic hollow clamping cylinders allow for the use of a wide range of chucks and collets on both work spindles.

Live tools

The two tool turrets deserve special attention, as they each feature eight stations and can be equipped with double and triple holders, which provides a decisive advantage.

When using live tools, there's an option to choose between overall and individual drive. This eliminates any influence from rotating adjacent tools. Advantages include less heat buildup, extremely smooth running, in some cases higher cutting speeds and improved surface finishes.

Another novelty compared to the TRAUB TNL32 is the considerably improved Y travel of +/- 50.8 mm at the upper turret. In connection with the single drive, this allows for all workpieces to be milled around the entire circumference—even with double tool holders.

The compact TRAUB sliding/fixed headstock automatic lathe is available in three configuration variants. While the TNL32-9 compact features nine linear axes, two turrets, a rear end machining unit with four stations and an autonomous counter spindle, the upper tool turret on the TNL32-9B >

The TRAUB TNL32 compact was often at the center of our customers' attention at the machine's premiere during our Open House in April 2023.



compact is equipped with an additional B axis. The TNL32-11 compact variant includes an additional front end machining unit with autonomous compound slide in Z and X directions as well as an NC swivel axis.

Automation entirely according to the customer's requirements

To enable automated operation, we offer both a bar loader and various options for workpiece removal. Small workpieces with a diameter of up to 20 mm can be flushed out quickly, safely, and gently from the counter spindle through the indexing shaft of the lower tool turret. For parts up to 700 mm in length, workpiece discharge can take place through the counter spindle. We also offer a standalone discharge unit consisting of a linear and a swivel axis that picks up machined workpieces up to 250 mm in length with a workpiece gripper and places them onto a parts discharge conveyor.

One of its highlights is the iXcenter robot cell that can be integrated as an option to handle insertion and removal of blanks and finished parts via the work area door. As an alternative, the robot cell can also be placed in such a way that it performs a handover with the workpiece gripper. In this case, the work area door remains closed and workpieces are transferred during production. The space-saving pallet storage unit can hold up to 28 pallets for autonomous machining. X

Machine highlights TRAUB TNL32 compact

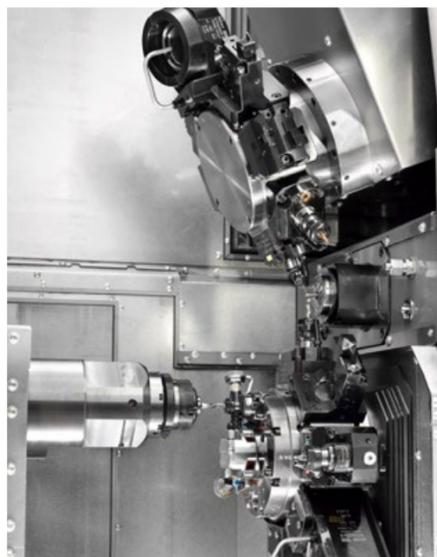
- ▶ Small footprint
- ▶ Generously dimensioned work area designed for process reliability
- ▶ Bar clearance up to 32 mm in diameter
- ▶ Flexible hydraulic hollow clamping unit on main and counter spindles
- ▶ Up to three tool carriers and one rear end machining unit, all with Y axis
- ▶ Simultaneous machining with two, three or four tools
- ▶ Large tool pool for setup-friendly production
- ▶ Short tool change times owing to the CNC indexing axis in the tool turrets and the front end machining unit

Find out more:

▶ www.index-group.com/tnl32compact



TNL32-9 compact



TNL32-9B compact



TNL32-11 compact



Left: Elos Medtech recently invested in four TRAUB TNL12 sliding headstock lathes. Machine operator Michael Mørkenborg and the entire machining team are thrilled with their performance.

In medical technology only the best is good enough

The Elos Medtech Group is a development and production partner for medical technology businesses that is recognized across the world. The Danish subsidiary in Gørløse specializes in manufacturing hearing aids, dental implants, and related tools. To ensure top quality and precision when turning the demanding components, the company has been investing almost exclusively in TRAUB TNL machines since 2005.

Tina Friis Poulsen, Managing Director of Elos Medtech Denmark, is proud of the development of her business: "We've built up huge expertise in dental implantology over the past 15 years. "We turn, mill, and weld titanium, high-strength stainless steel, brass, and chrome cobalt, but also machine ceramics and plastics such as PEEK (polyether ether ketone) and PPSU (polyphenylsulfone)—in other words, materials that are commonly used in medicine and biotechnology. And because we demand top quality, precision, and cost efficiency, we take great care to ensure that our production facilities are state-of-the-art."

Medical technology is an exacting discipline, especially when it comes to implants designed to remain in the human body for a very long time. Innovative developments based on many years of experience are therefore in demand. And that is one of the strengths of the Danish company, which decided back in 2001—at that time still trading as Pinol A/S—to concentrate entirely on the development and production of medical technology products.

Success with services and in-house products

The acquisition of Pinol by the Elos Medtech Group in 2005 boosted medical technology expertise. After all, Elos Medtech had already started developing hip and spinal implants in Sweden in the 1960s and, as part of a development project, gained experience in the manufacture of dental implants in 1975.

Tina Friis Poulsen goes on to add that "Here in Gørløse, we are primarily a development and production service provider in the dental business segment. With backing from the Group, we were also able to push the development of our own products. In 2007, for example, we launched a new torque wrench for precise placement of dental implants. Now, we sell 35,000 of them per year." This implant tool was followed by other innovative niche products for dentistry. Today's Elos Medtech Accurate® product range also includes abutments, scan bodies, and Titanium bases, all of which have major approvals and are suitable for the digital workflow in dentistry." >



Quality is our top priority—be it our products or our machinery. In this respect, we see ourselves in good hands with INDEX. The sliding headstock lathes from TRAUB also deliver outstanding performance in terms of precision and productivity.

Tina Friis Poulsen is Managing Director of Elos Medtech in Denmark



A living partnership: (from left to right) Tina Poulsen, Managing Director of Elos Medtech, during a plant tour with INDEX representatives Roger Sachse, Sales Manager Europe, Brian Olsen, Sales Manager Denmark, and Marketing Manager Rainer Gondek. Also seen are Henrik Bendtsen, Strategic Purchasing, and Niels Lieberkind, Production Engineer at Elos Medtech.

Long partnership with INDEX

Work with INDEX began with the torque wrench for implant screws. Henrik Bendtsen, who has been responsible for strategic purchasing of technical equipment for almost 20 years, recalls the early days: “We started out with the attachable head of the torque wrench. Originally, we needed three steps to produce it. When the turning specialists at INDEX assured us that this component could be manufactured in one step on a TRAUB TNL26, we wanted to give it a try. And with a sliding headstock machine, leased for six months, we actually succeeded. We were delighted with the result and the reduction in production time—and of course purchased the TRAUB TNL26.”

That was in 2005, and since then there’s been no let-up in enthusiasm at Elos Medtech, the company having now invested in numerous additional TRAUB TNL machines. At present, there are 35 of these sliding headstock lathes of various sizes and equipment levels in the production halls. Since 80 percent of all parts have a size of less than 18 mm and most can even be turned from bar stock with a diameter of 13 mm, the TRAUB TNL12s dominate. “We also have components, however, that require a B axis for complete machining,” says Henrik

Bendtsen. “For those, we purchased six TRAUB TNL18s equipped accordingly. And for larger products, we also have three TRAUB TNL32s.”

Maintaining high production standards

The experienced strategist explains the reasons why he invested exclusively in TRAUB lathes: “Our focus, first and foremost, is on quality. We need to be able to rely on each workpiece adhering to tolerances of a few microns and coming off the machine with the same high precision throughout. This is the case with TRAUB machines.” Bendtsen offers a second argument: “Since we, like everyone else in this industry, are under price pressure, new machines really need to contribute to extremely efficient production. From our very first TRAUB machine, we’ve never been disappointed in this respect. Whether it’s for small or large batches, simpler or complex parts, stainless steel or plastic, we’ve always found manufacturing strategies that keep us competitive.”

Valuable user experience

Over the years, a deep partnership has developed from which both companies benefit. Brian Olsen, INDEX Sales Manager responsible for



Denmark: “Elos Medtech is always on hand with suggestions on how details of our machines can be further improved. We naturally try to implement this valuable user experience.” Something that usually succeeds, as Henrik Bendtsen confirms. “We recently purchased four TRAUB TNL12 machines of the latest generation. We were delighted to discover that INDEX managed to implement numerous of our suggestions for improvement. The result? We can further increase our productivity with the new TRAUB TNL12.”

Olsen names a few key aspects of the new-generation TRAUB TNL12: “We’ve made the changeover as easy as possible for users of the previous TRAUB TNL12. All workpieces produced on the first generation of TNL12s can also be produced on the new TNL12s without any restrictions or major program changes. In addition, existing tool holders for the turret and the front and rear end machining unit can continue to be used and supplemented with new, more powerful models.” Regarding increased productivity, he points to a few technical details: “The front end machining unit and counter spindle are now on separate slides, which means that main and counter

spindle machining no longer influence each other. As moving masses have become smaller, the machine is also more dynamic, and users benefit from greater programming freedom. The new TRAUB TNL12 also requires less floor space.” X

Successful in-house product: The Elos torque wrench for dental implants sells up to 35,000 units per year. The click-in head is manufactured in a single step—a manufacturing capability that laid the foundation for the long-standing partnership between Elos and INDEX.

Medical technology products for a better quality of life

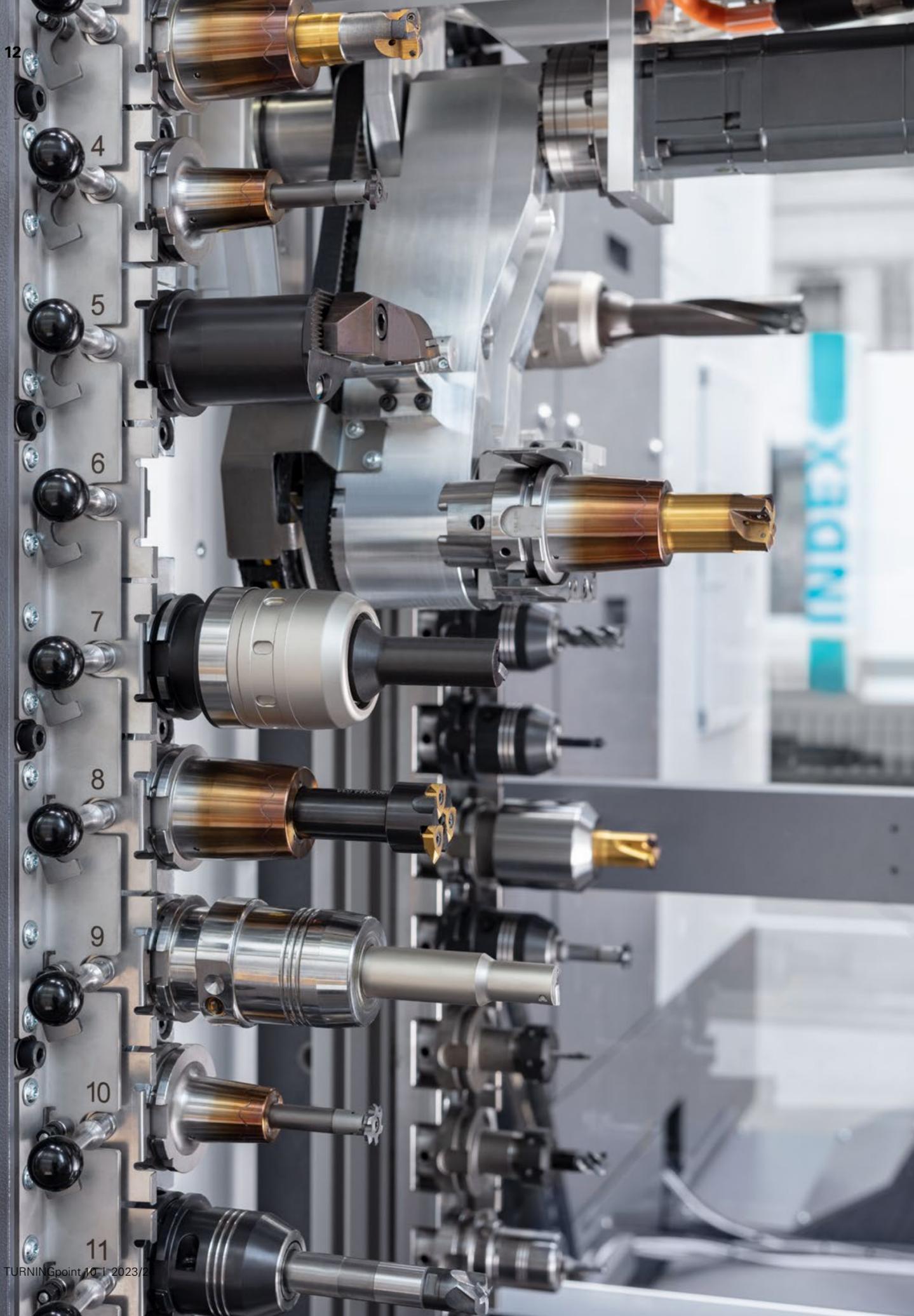
Elos Medtech Group is a worldwide development and manufacturing service provider for medical technology suppliers. It employs more than 550 people across the globe in its three business units Dental, Orthopedics, and Life Science. About 195 people work at the Danish subsidiary in Gørløse—specialized in hearing aids, dental implants, and related tools.

Elos Medtech, Engvej 33, 3330 Gørløse, Denmark
www.elosmedtech.com

Left: Tina Friis Poulsen, Managing Director of Elos Medtech Denmark, and her colleague in charge of strategic purchasing, Henrik Bendtsen, both clearly focus on quality.



More customer success stories online:
www.index-group.com/success



More than 500 tools for the milling spindle

Complete machining is in demand like never before and the new INDEX G series turn-mill centers meet nearly all customer requirements in this respect. Very complex machining operations and the automatic mode may require more than the 139 tool locations in the integrated storage. Our product range now includes the additional tool magazine iXtools, which can provide up to 392 additional tools.

In addition to a wide range of turning operations, the INDEX G series and TRAUB TNX220 turn-mill centers can also carry out complex drilling, gear cutting, and milling operations all the way to simultaneous five-axis machining. The motorized milling spindle on the Z axis slide with the hydrodynamically mounted Y/B axis is essentially responsible for this.

To perform a great variety of machining tasks quickly and efficiently, the motorized milling spindle uses the machine's easy-to-set-up integrated tool magazine during machining. It comes with one or two rows and includes a setup station located at the front as well as an additional access point from the rear of the machine.

In the INDEX G220, it provides space for up to 139 tools (HSK-T40). For some applications this was still not enough. These customers requested an extensive magazine that would be able to hold enough sister tools for automatic mode and that would minimize setup processes.

Retrofittable iXtools tool magazine

With the additional tool magazine, INDEX offers these customers a new solution that can even be retrofitted depending on the G machine's configuration. iXtools is a comprehensive extension of the machine's integrated tool magazine and provides unlimited access to the tools stored within it—up to 392 in the case of the INDEX G220 (with HSK-T40 mountings).

Since the motorized milling spindle still fetches the required tools from the machine's integrated tool magazine using a forced, cam-controlled NC double gripper, INDEX developed a special solution. By reading the NC program "in advance," the tools are transferred in due time from the iXtools magazine to the machine's integrated magazine. This preserves the key advantages of the machine's integrated tool magazine, such as high travel speeds, "on the fly" tool identification using an RFID system, setup during production time and two buffer locations for immediate replacement of spare tools. **X**

iXtools cleverly extends the integrated tool magazine on INDEX or TRAUB turn-mill centers. All the advantages of the internal magazine are preserved owing to the need-based loading process.

INDEX iXtools for turn-mill centers

- ▶ Comprehensive extension of the machine's integrated tool magazine
- ▶ Unlimited access to the tools in the additional magazine
- ▶ "Advance reading" of the requirements from the NC program and timely transfer to the machine's integrated tool magazine





Gear components for premium forklifts

Owing to their high rigidity and excellent damping properties, INDEX machines are the ideal solution for complete machining of complex workpieces including the integration of gear teeth. The Czech Linde Pohony plant found this to decommission their existing INDEX G400 machines, after 20 years of service, and invest in six new INDEX G420s. This is expected to become a great success. The new turn-mill centers should already be amortized within three years.

Linde Pohony in Český Krumlov (Czech Republic) has manufactured vital components for hydrostatic forklift axles on INDEX G400 machines for twenty years. In 2018, time had come to upgrade the existing machinery to the latest state of the art. Petr Vitásek, Head of Production and Technology, and his team tested various offers and decided once again to go for INDEX. In 2020, the plant's production received six INDEX G420 turn-mill centers.

Why INDEX? Satisfaction with the previous generation of machines argued in favor of the lathe manufacturer. Petr Vitásek mentions other important criteria: "Few suppliers were able to offer a machining center that is equipped with two turning spindles, two turrets, as well as a

powerful motorized milling spindle that perfectly masters the Power skiving technology. This gives us decisive advantages, particularly since we are able to achieve complete machining with the new INDEX G420 machines. Before, we had to use a lathe, a milling machine, and a gear cutting machine."

This investment allowed Linde Pohony to increase the productivity of its machines and at the same time save space in the production hall and thus increase the productivity per unit area. Miroslav Vařečka, Head of Production Engineering, points out another advantage: "We can use our turn-mill centers not only for shaft production, but also for other tasks, such as manufacturing transmission housings." >

They praise the great collaboration: (From left to right) Michal Kaláč, Sales Representative Galika CZ; Miroslav Vařečka, Head of Metal Cutting Technologies, Pavel Špachman, Technology Expert, Petr Vitásek, Production and Technical Manager at Linde Drives, and Marc Müller, INDEX Sales Manager for Eastern Europe.





The machining team at Linde Pohony is pleased to be working with the new INDEX G420 turn-mill centers. Among other things, they praise the high precision, the fast tool change, and not least the excellent user-friendliness.

Power skiving without complex programming

A major argument for choosing the INDEX G420 turn-mill centers was the option for manufacturing gearings using the Power skiving process, and also being able to use it in serial production. Technology Expert Pavel Špachman is aware of how demanding the machining operation is: "Power skiving is definitely a complex technology—especially in terms of machine performance, precise spindle synchronization, and vibration damping. The very precise and powerful INDEX G420 machines are perfectly able to cope with these requirements. And the fact that they do so without complex programming was of utmost importance to us." A special INDEX Power skiving cycle and user-prompted input screens for workpiece, tool, process, and correction data ensure easy operation.

Production Manager Vařečka mentions dry machining as a further advantage: "Compared to the former machining technique, it is no longer necessary to clean off any oil residues on the workpieces, which implies time and financial savings."

Automation for greater productivity

Shortly after commissioning, Linde Pohony had already reached high productivity in the machining of gear components. Management decided that the time had come to automate the turn-mill centers. The production team wanted to transfer loading and unloading, washing, and insertion of the workpieces in transport containers to a robot. The aim was to further shorten cycle times and making the operating staff's work easier.

Since INDEX machines are prepared at the factory for the integration of robots, automating them wasn't difficult. In the mean time, the first two machines have been automated, and two more are to follow soon.

Collaboration and on-site support

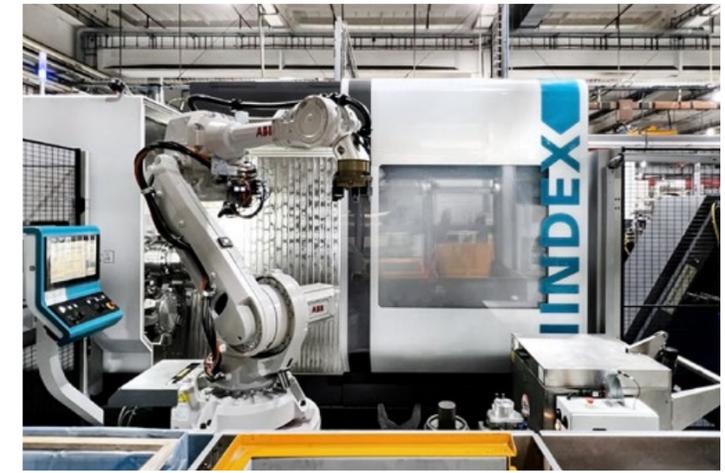
The Technical Director at Linde Pohony, Petr Vitásek, explicitly praises the constructive collaboration with INDEX: "Over the past two years since we received the G420 machines, we were able to clearly see that our proposals for improvement were listened to in Esslingen and for the most part implemented."

Vitásek and his coworkers also appreciate the local Czech sales and service subsidiary, Galiky. They not only supply the local market with INDEX machines, it also handles consulting and services, including maintenance and spare parts supply. Galika representative Michal Kaláč adds that "We have also conducted training for operators, technology experts, and maintenance staff in Český Krumlov, and we've provided technical support at the start of production."

Investment paid off

In the mean time, all six INDEX G420 turn-mill centers are working at capacity. They are run in three-shift operation, 16-17 shifts per week, and produce up to 130,000 shafts for hydrostatic axles per year.

According to the managers responsible, the acquisition was worthwhile in any event. They expect to amortize the investment, for which the business also received EU funding, within about three years. X



Our new INDEX G420 machines enable us to perform complete machining instead of producing sequentially on individual lathes, milling machines, and gear cutting machines as was the case until now. This not only implies increased productivity, but also saves space.

Petr Vitásek is Head of Production and Technology at Linde Drives



Linde Pohony specializes in driving and steering axles for forklifts

The company Linde Pohony s.r.o. was founded in April 1997, in Aschaffenburg, Germany, as a subsidiary of Linde Material Handling, Germany. The site in Český Krumlov, Czech Republic, produces electric and hydrostatic driving and steering axles. Its production capacity places Linde Pohony among the worldwide leading manufacturers of similar drive units.

Linde Pohony s.r.o.
Tovární 118, 38101 Český Krumlov, Czech Republic
» www.linde-pohony.cz



Photo: Linde



More customer success stories online:
» www.index-group.com/success



New products and innovations for 2023



INDEX ABC

Now also with FANUC controller

The reliable production lathe INDEX ABC can be used to manufacture simple to complex CNC turned parts. With the new Y axis in the upper turret, the uses for this machine are nearly limitless. In addition to the tried and tested SIEMENS controller, the FANUC 31i now is also available.

➤ www.index-group.com/abc



INDEX TRAUB universal lathes

Now also available in long version with more tools

The INDEX B400/B500 and TRAUB TNA400 / TNA500 universal lathes are available immediately in the radial turret variant equipped with 18 instead of 12 tool stations. The larger 500 variants are optionally available with a turning length of up to 1,200 mm—that's a lot of space for new machining options.

➤ www.index-group.com/b500
 ➤ www.index-group.com/tna500



INDEX CenterMaster

Now also for single-spindle lathes

INDEX CenterMaster for single-spindle and multi-spindle automatic lathes now makes setup even easier. The new setup support consisting of the CenterMaster app, dial gauge, and Bluetooth interface simplifies and speeds up centering of your tool holders on the X, Y, and H axes.

Simply faster parts.

➤ www.index-group.com/centermaster-video



INDEX ClampMaster

Clamping with pinpoint accuracy

INDEX ClampMaster allows you to quickly perform clamping force measurement on your machine. Secure your production process and thus reduce your machine's energy requirements. Measurements can be documented both statically and dynamically.

➤ www.index-group.com/clampmaster



As Project Coordinators, we maintain regular contact with our customers and suppliers, bring together various cutting-edge technologies, and thus ensure smooth project delivery.

Nils Kreuer works as Application Project Coordinator at INDEX

Partnership with the customer—working together towards ideal production solutions

The requirements for machine tools are constantly increasing. Manufacturing tasks are becoming increasingly complex and the machines offer an ever-increasing range of functions. The range of machines and peripheral equipment we offer includes much more than just plain steel and iron. We also offer comprehensive application support that unlocks the full potential of our products and enables efficient automation and integration in our customers' overall process chain.



Working together towards ideal production solutions

INDEX ranks among the leading machine tool manufacturers when it comes to technology. However, the scope of our services goes far beyond the development, manufacture and sale of machines. More than half of the machines we supply do not include any customer-specific equipment. These sales are primarily to customers who are already very familiar with the corresponding types of machines, and who have the required skills to set up the machinery.

For all other sales, machine delivery is preceded by a common customer-specific application process that can take very different shapes and forms. In Germany, a team of more than 70 specialists is dedicated to a great variety of customer projects—from programming and setting up a single machine to large, turnkey projects that include iXcenter automation or interlinked systems. There are also application specialists who work on-site at a great number of INDEX locations outside Germany. They provide additional support to our customers.

The offer extends far beyond the machine

Our technology solutions extend across the entire range of machines, from conventional single spindle production lathes, to sliding headstock lathes, universal lathes, multi-spindle

automatic lathes, and all the way to project-based business with turn-mill centers and full automation.

We provide support before the machine is even purchased, intensive professional consultations enable us to live up to your expectations and offer the best solution from an economical standpoint.

This generally begins with an intensive dialog with a prospective customer, whose ideas are noted, assessed and implemented where possible, until they—hopefully—are convinced that purchasing an INDEX or TRAUB machine is the right decision and that the commonly developed application process will provide them with the best manufacturing solution.

Finding the best solution together

Following the decision to purchase, we initiate a two-way process. On the one hand, our equipment specialists take care of the customer workpiece, i.e. programming and implementation of the machining process. On the other hand, project coordinators handle all tasks aimed at synchronizing our activities with those of the customer and various suppliers. All the way down to final acceptance at the end of the project, everything

» The investment plan for the Sandvik Coromant production unit in Renningen included the replacement of several turn-mill centers.

Our expectation was not only to replace the old systems with the current successor, but also to considerably improve productivity in connection with a significant reduction of the current cycle times. Other aspects included increasing the quality of manufactured parts and making the process more reliable and stable.

This meant that INDEX had to reproduce the entire process and show the potentials for improvement with respect to the previous sequence of operation. The solutions that the INDEX Application team proposed as well as the turning trials carried out under very real conditions showed very good results in all respects. Ultimately, that's why we chose the proposed turn-mill centers.

Wolf Brenner is Head of Production Technology at Sandvik Tooling Supply in Renningen

falls into place so that the customer obtains a manufacturing solution that meets their requirements.

The machine setter's occupation has thus changed significantly over the past few years. While they previously were mostly limited to equipping the machine with tools and clamping devices and loading the CNC program, their tasks are much more diverse today. It is becoming increasingly common that our machines operate within a manufacturing system consisting of various units, such as automation, workpiece measuring systems, or cleaning systems. Quickly becoming familiar with these systems to integrate them into our manufacturing solution is a challenge. This also applies to current manufacturing technologies and the use of our own in-house technology cycles, such as grinding, power skiving, or high-speed whirling.

When planning machine setup, today's tasks are primarily of digital nature. This is where the INDEX Virtual Machine, for instance, plays an important role. Planners can use it to load all the components required for the machining operation into the system, by dragging and dropping them in



We consider it our duty to look at what happens before and after the processes being run on our machines. With the iXcenter robot cell, blanks and finished parts can be fed and discharged quickly, safely and flexibly. Our automation solution is modular in structure and allows you to efficiently integrate various processes.



Dr. Lakner, you are the head of application in the Technical Sales department since January 1, 2023. Please briefly introduce yourself and your area of responsibility.

I've always been into machine tools. I've learned machining nearly from scratch in a vocational training course to become an industrial mechanic at a lathe manufacturer. I went on to study mechanical and industrial engineering in Esslingen, Albstadt-Sigmaringen, and Cardiff. During my doctoral studies at RWTH's machine tool laboratory in Aachen, I specialized in machining difficult-to-machine materials, which are particularly common in the aerospace industry. In June 2021, I started at INDEX as Global Key Account Manager Aerospace. In my new position, I can make best use of the fundamentals in machining I learned and of my knowledge in customer support.

How is the Application department at INDEX organized?

The department covers all activities from developing the machining solution, carrying out turning tests, and order-specific equipment to secure cycle time and quality, all the way down to project coordination while the machine is built—in very close coordination with the customer.

Your area of responsibility first and foremost consists of services for INDEX customers. Why do customers have such high priority at INDEX?

Excellent machine tools form the basis for success at INDEX. However, an excellent machine tool alone does not always suffice to meet increasing customer requirements. On the one hand, customers expect to receive the best support from our project coordinators during the project phase and, on the other, the demand for turnkey solutions is rising. One key driver thus is securing the customer's production processes. With today's complex interwoven supply chains and just-in-time production, customers must be able to rely on the fact that the machine will be produced in due time and to the required quality. This is the only way to ensure there will be no delays or downtimes in production and no associated penal damages. The customer cannot

overcome the higher component requirements alone. As a result, project partnerships for technologies and implementation strategies are becoming increasingly important.

What trends have you identified in your customers' manufacturing behavior? To what extent are you able and willing to support this?

I mainly observe two trends that both aim to produce the component within a single manufacturing solution. The first trend is process integration within a single machine. This is achieved by integrating manufacturing methods, such as grinding or gear cutting, to manufacture the entire component within a single manufacturing system. In this respect, our customers benefit from our application specialists' many years of experience with technology and can obtain a reliable turnkey solution, if they so desire. The second trend is very clearly autonomous manufacturing. This is where particularly automation and handling solutions play a central role. Depending on component and flexibility requirements, the solution must be tailored to the customer's needs. These demanding projects require close coordination between customers and suppliers of measurement technology and automation, as well as the application team's in-depth understanding of the processes.

What goals have you set for yourself in the coming years?

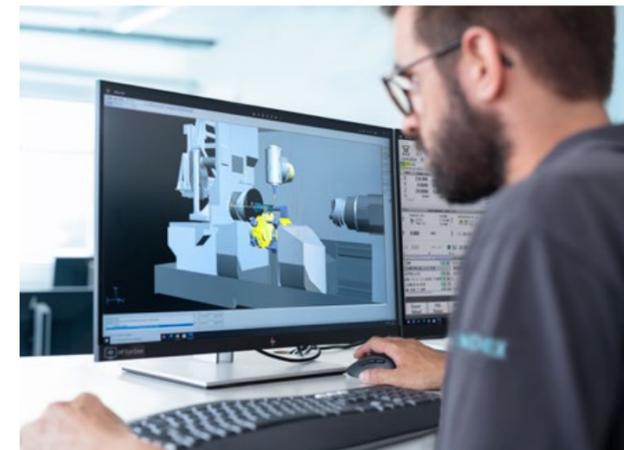
Continue to develop our processes so that we are able to implement even more comprehensive system solutions. Another goal is to further intensify the collaboration with technology development to implement the technologies developed there even faster in our customers' projects. Last but not least, the digitalization of our processes is another goal we aim for. The INDEX virtual machine already provides us with an outstanding digital tool that lets us elaborate the application solution entirely digitally and without machine downtime. **X**

Dr.-Ing. Thomas Lakner heads the Application team within the Technical Sales department at INDEX



Our aim is to continue to develop our processes so that we are able to implement even more comprehensive system solutions.

The expert knowledge of our metrologists is essential for the machine setup process. Workpiece measurement algorithms can thus be developed together with the machine setup team.



The "Virtual Machine" and "WinFlex IPS" software solutions considerably facilitate planning and specification of a machine setup. From 3D work area examination to collision checks, all the way to NC program optimization, our software offers a comprehensive digital solution.

Marisa Wozniak works as machine setup planner at INDEX

the form of 3D data, and set up the machine digitally. The INDEX virtual machine also makes a decisive difference for programming, as it simulates the machine control system exactly in the control system's interpolation cycle. Planners can thus optimize the machining processes with graphic guidance. This approach helps to achieve simultaneous use of the greatest possible number of tools, reduce idle times, and bring the cycle time down to a minimum. The setup sheet and the CNC program can then easily be created from the virtual machine and sent to the machine.

Never lose sight of quality

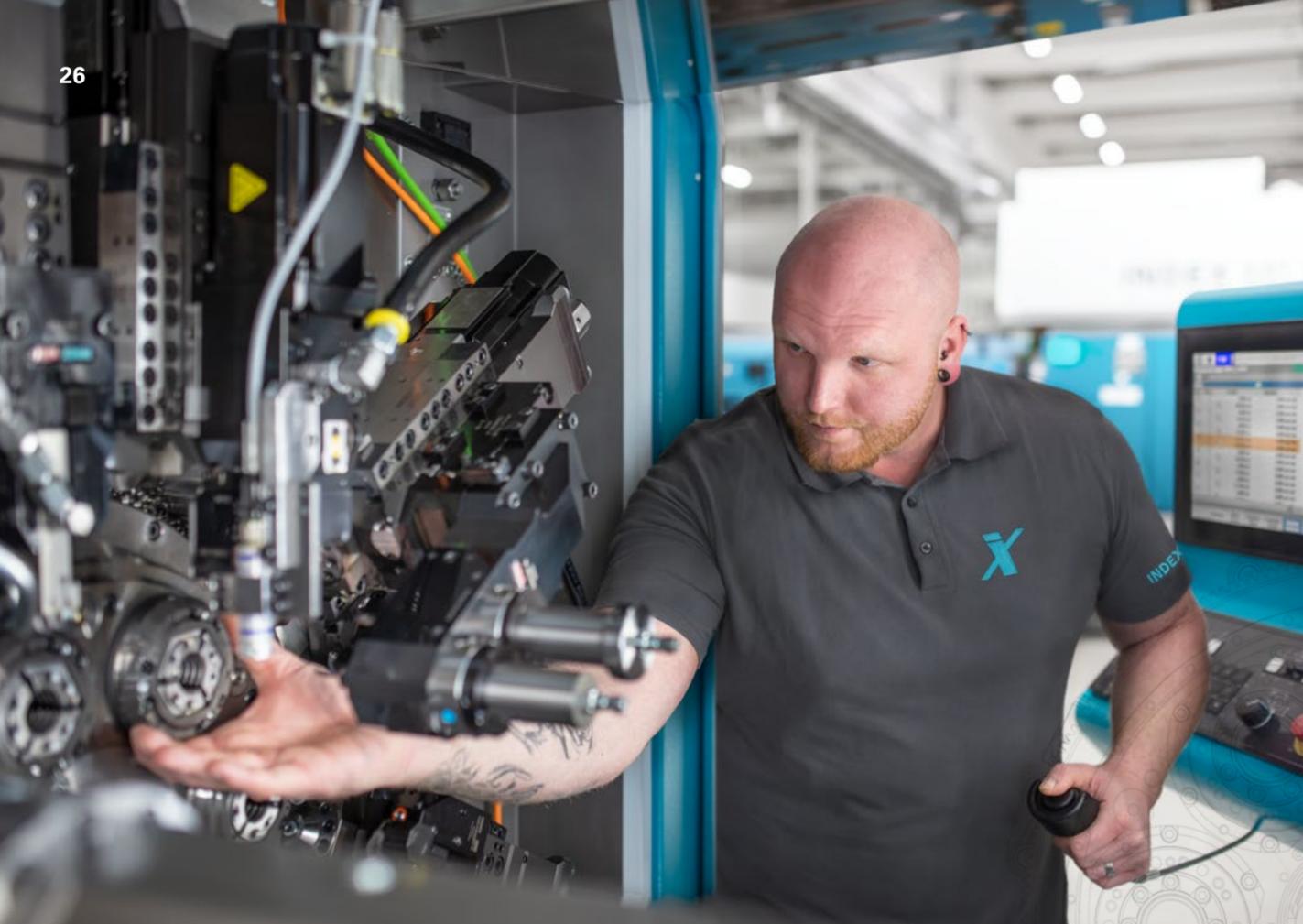
The success of our projects relies on the interaction between measurement technology and machine setup. Our metrologists in the Application department implement the measurement tasks specified by the customer. Their expert knowledge is essential for the machine setup

process. Algorithms to measure the workpieces can thus be developed together with the machine setup team and generally in coordination with the customer. Further possible functions include closed-loop feedback of the measurement data to the automated process control.

Integration in the overall process chain

The trend is clear: we are moving away from sequential manufacturing—turning, milling, and grinding on separate machines—and towards complete machining. As an example, we can mention a project for which an INDEX G200 is to be interlinked with several eroding machines.

We are perfectly equipped in our application centers. Where necessary, we can also design and optimize processes in close collaboration with our branch offices and their application centers. **X**



The perfect maintenance concept for multi-spindle lathes

You own an INDEX multi-spindle automatic lathe and want a solution for preventive maintenance and early failure detection? Our machine check is just what you need. Whether you choose a basic or extensive performance package, you can customize its configuration by adding additional bundled offers for geometry, electronics; applications, or loading magazines—our service team delivers the exact check you need.

The INDEX machine check for multi-spindle automatic lathes is the perfect service offering to get in-depth information about the condition of your machine. The basic package already includes inspection of individual machine components, testing of monitoring and safety devices, as well as measurement and assessment of clamping forces and bearing conditions.

With the more extensive performance package, our service technicians will additionally determine gib play, backlash, and center height of slides. The checklist also includes testing the gripping and rear end machining positions of the synchronous spindle, as well as perform-

ing a geometry check and alignment, where necessary, on the loading magazine.

Special packages for custom requirements

To meet every user's expectations, additional packages complete the offering to include extensive testing on machine geometry, electronics, and applications, such as robotics, rotary tables, and shuttles. There even is a check package for the MBL bar loader.

An INDEX service employee comes to the user's location to perform the tests on site. To start the machine check, the technician records the actual values under production conditions. >

Our service employee brings the required know-how and skills from INDEX directly to your machine on site. The technician examines the machine components and checks that the monitoring devices are in proper working order.



Our machine check concept is tailored to the condition of your machines and delivers greater availability, greater productivity, and greater process reliability. We provide the defined scope of services at a fixed rate and within a precisely defined time period to support your planning.

Patrick Weber is Head of Operational Control and Technical Field Service for Multi-spindle Automatic Lathes at INDEX

Testing conditions on respective components are also recorded and measured for assessment. The results are recorded in an inspection report and subsequently discussed with the customer. Wherever necessary, the technician recommends follow-up measures for which an unbinding offer is established free of charge.

Fixed-price machine check

The time scale for the basic machine check package is three working days. A specific time period is defined for each of the other packages. The costs are a fixed amount that not only includes the work on site, but also all ancillary costs for the service employee.

The described machine check is available for all INDEX multi-spindles and can be ordered individually or with a custom master agreement. It is particularly popular when purchasing or selling used machines to obtain a professional assessment of the machine's condition and value

from the manufacturer—including any possible servicing costs.

Whatever the case may be, a machine check results in an added value for the customer. Combine it with regular maintenance to keep the machine in top condition, for the best machine availability, productivity, and process reliability.

INDEX has gathered additional information regarding the machine check for multi-spindle and single-spindle lathes as well as about all other service products under iXservices. Check our website or your service partner for an overview. X

INDEX machine check for multi-spindle automatic lathes

- ▶ Professional condition analysis of your machine
- ▶ Customizable inspection scope based on bundled solutions
- ▶ Examination according to machine-specific checklist
- ▶ Comprehensive documentation of current state of machine
- ▶ Recommended actions directly from the machine manufacturer

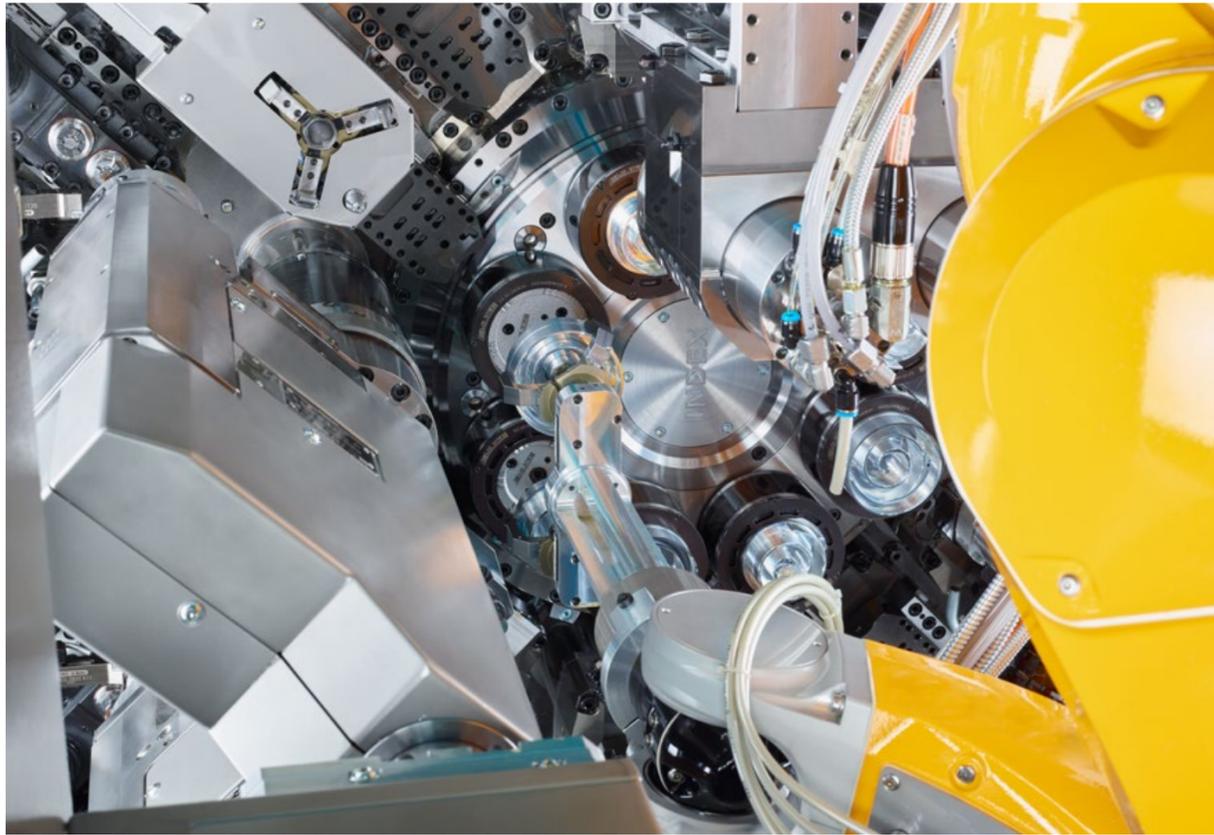
Find out more:

> www.index-group.com/ixservices



Everything revolves about scrolling

Scroll compressors are becoming increasingly important and are required in large numbers. The multi-spindle team therefore developed a process based on the INDEX MS40-8 that allows for both spiral-shaped functional components to be manufactured with the highest precision and very short cycle times.



Our INDEX MS40-8 CNC multi-spindle lathe is extremely versatile. One good example thereof is the scroll machining system we developed. This variant can create precision in the μm range. It can hardly be surpassed in terms of cost-effectiveness when it comes to large-scale production.

Benjamin Klotz heads the Development & Design team for multi-spindle automatic lathes at INDEX



Efficient scroll production on the INDEX MS40-8

Scroll compressors are increasingly being used in cooling systems, air conditioners, and heat pumps. They are also used in hybrid and electric vehicles to cool down electric motors, batteries, and the interior of the vehicle.

It does not take much to predict the increasing demand for certain components. Yet, the two spiral-shaped functional components of a scroll compressor do not appear to be typical components for a multi-spindle automatic lathe at first glance. However, after further consideration, our developers have found a way to use the strengths of the multi-spindle lathe for the required machining operation.

Tolerances in the lower μm range

A careful selection of the individual process steps allows for the entire machining of the workpieces from blank to finished part to be performed in a machining pass. This allows the traditional premachining of the workpieces to be omitted. The clamping technology that is implemented guarantees that the highly precise shape and position tolerances are observed. A total of four high-frequency spindles

running at speeds up to 30,000 rpm are implemented for the milling operations. This results in a cycle time per workpiece that is only about 25% (!) of that for current manufacturing solutions on machining centers—and with a significantly reduced required floor space to boot.

Fully equipped with additional components

The INDEX MS40-8 is fully equipped with eight main and two counter spindles, as well as all sorts of tool slides. The scroll machine does not include a bar feeder. Instead, an integrated robot feeds the machine with blanks made of forged or cast aluminum and up to 100 mm in diameter.

High surface quality

Conventionally, these scroll components are milled on machining centers with a central clamping device. In this case, the spiral is obtained by interpolating the X and Y axes. This creates the disadvantage that the milling spindles must pass through four reversing points, in which an axis changes the direction of travel. This may lead to inaccuracies. >



What is a scroll compressor?

Scroll compressors are used to increase the pressure of gases. They essentially consist of two functional components with interlocking spirals. While one of the parts remains fixed, the other moves along an excentered circular path. The spirals thus form rotating chambers whose volume becomes smaller with each rotation. The gaseous medium is increasingly compressed. When it reaches the middle, the scroll compressor pushes the compressed gas through an opening into the connected pipe.

Machining on a multi-spindle automatic lathe has the advantage that the component rotates. Therefore, only one linear axis and one rotary axis are required to let the milling cutter travel along the spiral from the outside towards the inside and back on the other flank. This means that both spiral flanks are machined in one continuous step, which is apparent from the high surface quality.

Considerable savings

The cost-effectiveness of a multi-spindle automatic lathe is undisputed when it comes to large quantities. In addition to clearly reducing cycle times, high productivity per unit area and minimal operator effort also come to bear.

We will be showing scroll machining live in action at the EMO 2023 on the INDEX MS40-8 as a double four spindle machine. X

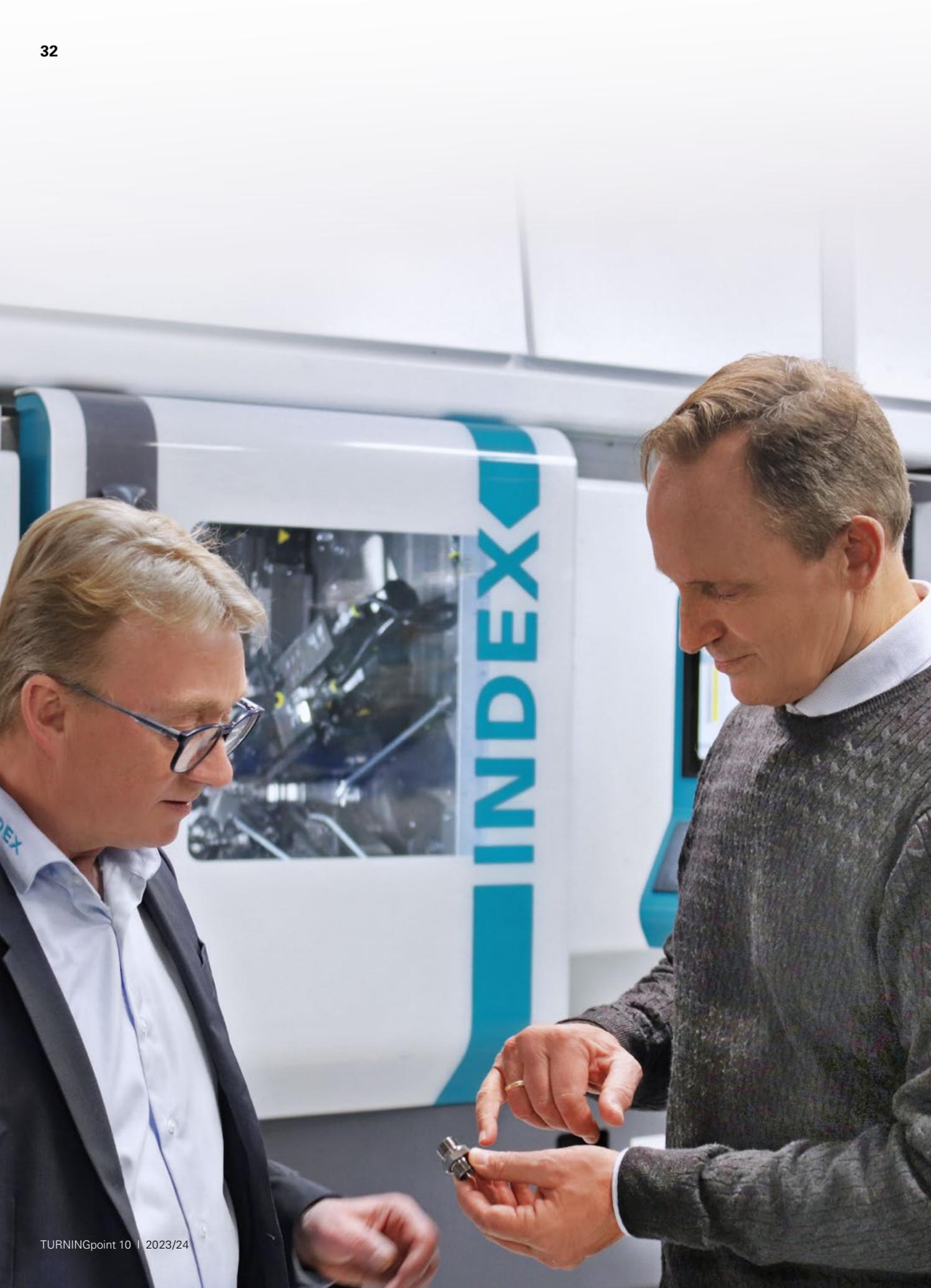


INDEX MS40-8 machine highlights

- > Compact spindle drum with eight integrated fluid-cooled motor spindles
- > The ideal speed can always be programmed for each spindle position and cutting tool edge
- > Highly-dynamic slides with slideways (X axis)
- > Non-wearing Z axis owing to quills with hydrostatic support
- > Chuck part machining with robot loading and unloading
- > Fast swiveling synchronized spindles with C-axis for rear-end machining

Find out more:

> www.index-group.com/ms40-8



Large batches at small prices

Why make families of parts abroad when you can get them at comparable prices and in perfect quality from Denmark? At REA in Otterup, more than 140 automated machines ensure the on-time, high-quality production of large and small batches. These machines include numerous INDEX turning centers—INDEX ABC, C100, C200, V160, and, more recently, an INDEX MS32-6 multi-spindle machine, which can efficiently produce even complex components in quantities of millions.

Family-owned REA automatdrejning ApS has been an established supplier of turned and milled parts in large and small batches for over 50 years. Managing Director Lone Demant Nielsen: "We are the largest manufacturer of turned parts in Denmark and are also a leading supplier throughout Scandinavia. This is largely thanks to my father, who founded REA in 1969. As far back as the early 1970s, he recognized the growing need for series parts, and his was the first company in Denmark to set up large-scale production based on multi-spindle lathes."

Her husband Peter Nielsen, in charge of operations and responsible for the extensive machinery, points out that quality and on-time delivery of parts have played a pivotal role from the very beginning. Attractive pricing has also always

been an important criterion. "In this respect, we can definitely compete with suppliers from Eastern Europe and Asia, even today," says Nielsen.

The decisive element in the company's continued success, he says, are the qualified employees and premium machines, which retain their quality in the long term if they are well maintained. "I looked into it," says Peter Nielsen, "and we've been working with INDEX for 45 years. We bought our first INDEX GB42 lathe back in 1978. We still have four of these enduringly accurate machines. They don't run every day, but they perform well on the jobs they're used for." Similarly, a couple of TRAUB TD26 sliding headstock lathes also date from REA's early days. "This kind of quality over so many years is unique," says Peter Nielsen. >



Our new INDEX MS32-6 multi-spindle automatic lathe enables us to manufacture even complex parts very efficiently in large batches.

Peter Nielsen
is COO at REA

Peter Nielsen (right) and Brian Olsen from INDEX maintain close contact. REA is extremely satisfied with the service and advice provided by the INDEX team based in Denmark.

An economical solution for every inquiry

Part of REA's recipe for success involves ensuring a wide variety of machinery so that the most efficient manufacturing solution can be selected for any particular order. "The main focus for us is turning, which accounts for over 90 percent of what we do," says Peter Nielsen. "Here, we manufacture quantities from a hundred into the millions. Almost all our horizontal lathes are automated with bar loaders and can process material from 3 mm to 65 mm. We machine component sizes beyond that, for example, on our INDEX V160 vertical turning centers, which are equipped with a pallet system and a robot for automatic loading and unloading."

Twelve INDEX ABC production lathes as well as several INDEX C100 and C200 machines are available for demanding series parts. As an example, Peter Nielsen shows a turned part that must maintain a "k6" tolerance at a 17 mm diameter. This means that the tolerance ranges from +12 µm to -1 µm. "Not a problem for our new INDEX C200," says Peter Nielsen. "We also easily achieve the surface quality of Ra = 1.6 µm."

INDEX MS32-6 CNC multi-spindle machine—an investment in the future

More than 30 INDEX and TRAUB machines are currently located in the REA production halls—and more are coming. The latest investment was an INDEX MS32-6 CNC multi-spindle automatic lathe. "An investment in the future," says Peter Nielsen, citing two reasons. One concerns the impending ban on steel and brass alloys containing lead. "Even without legislation, we're seeing strongly increasing demand for components made of lead-free materials," says Peter Nielsen. "This is a problem for our , cam-controlled multi-spindle machines."

Why? Well, even a small amount of lead makes steel and brass easier to machine. If there is no lead, the result is usually longer chips that can wrap around the tool and require great effort for their removal. Unlike cam-controlled automatic lathes, CNC machines can counteract this, for example with the cycle-integrated ChipMaster chip breaking software offered by INDEX. It optimizes chip freely programmable breaking at variable feed rates, regardless of the material, speed, or type of machining. >

High-volume production to customer requirements

REA automatdrejning ApS in Otterup, Denmark, is one of Scandinavia's leading suppliers of turned parts. The family-owned company specializes in the large-scale production of parts made of steel, stainless steel, brass, aluminum, and plastic.

Around 50 percent of its production is exported, mainly to Germany and other European countries. REA employs 85 people, and they generate approximately 12 million euros in annual revenue.

REA automatdrejning ApS
Industrivej 2, 5450 Otterup, Denmark
> www.rea.dk



More customer success stories online:
> www.index-group.com/success



All production processes under one roof—at the 20,000 m² company headquarters in Otterup. INDEX C200 production lathes are lined up there among other machines. REA likes to machine larger parts on the INDEX V160 vertical turning centers with pallet system and robot loading.



REA's latest investment: the new INDEX MS32-6 multi-spindle automatic lathe, designed for high productivity with short cycle times. REA produces 750,000 of these hexagon screw connections on this machine.

Peter Nielsen is certain: "For large lead-free batches the ChipMaster solution is almost indispensable, which is why we have equipped the INDEX MS32-6 accordingly."

A second aspect also persuaded him of the need to purchase the INDEX MS32-6: The complexity of the high-volume parts ordered from REA is increasing significantly. "This is where the flexibility of the INDEX MS32-6, with its six work spindles and twelve cross slides with NC axes in X, Z, and Y, really suits us," Peter Nielsen is pleased to say. "Since we can also use driven tools, this opens up a wide range of machining options for us. For example, we can set off-center bores, and perform thread milling, contour milling, gear hobbing, and polygon turning on this multi-spindle automatic lathe."

Flexible and extremely precise

Brian Olsen, INDEX Sales Manager Denmark: "Our new multi-spindle automatic lathes offer many configuration options. For example, the INDEX MS32-6 can be equipped with up to two synchronous spindles for rear-end machining in addition to the six main spindles, and the up to twelve tool carriers can be freely configured as compound slides, grooving slides, or drilling slides." He points to the fact that the machine is equally suitable for slightly lower quantities, as the quick clamping system and the patented W-serration, for example, minimize setup time.

The INDEX MS32-6 also offers an option for simpler components, as it can be used in a

six-spindle or a double three-spindle configuration. At the moment, this is not so important to Peter Nielsen. "Simple parts are currently primarily manufactured in the Far East," he says. "But who knows? In many cases, part production has since been relocated back. Maybe we can still make good use of the 2x3 spindle option in the future." For now, however, he plans to utilize his new multi-spindle machine for complex high-volume parts, such as pump and valve parts made of the lead-free brass material Ecobross. Orders that previously had to be turned down.

Service—more than the icing on the cake

The INDEX MS32-6 has been in operation since December 2022. And it's not only Peter Nielsen but also the machine operators who are enthusiastic. After two weeks of training in Germany and one week of on-site start-up support, they feel very comfortable operating this INDEX multi-spindle automatic lathe: "That says something about the high quality of training. After all, this is a new technology for us, and our experience with cam-controlled multi-spindle machines is of little help; whereas our CNC experience from the single-spindle field is of much greater value. If necessary, we can always turn to the competent team at INDEX Denmark."

One of the most striking aspects of the new multi-spindle machine is its high accuracy, as Peter Nielsen explains: "As far as possible, we try to stay in the middle of the required tolerance band, which we achieve perfectly after a short warm-up period. We do not need to make any adjustments. That saves time and money." X

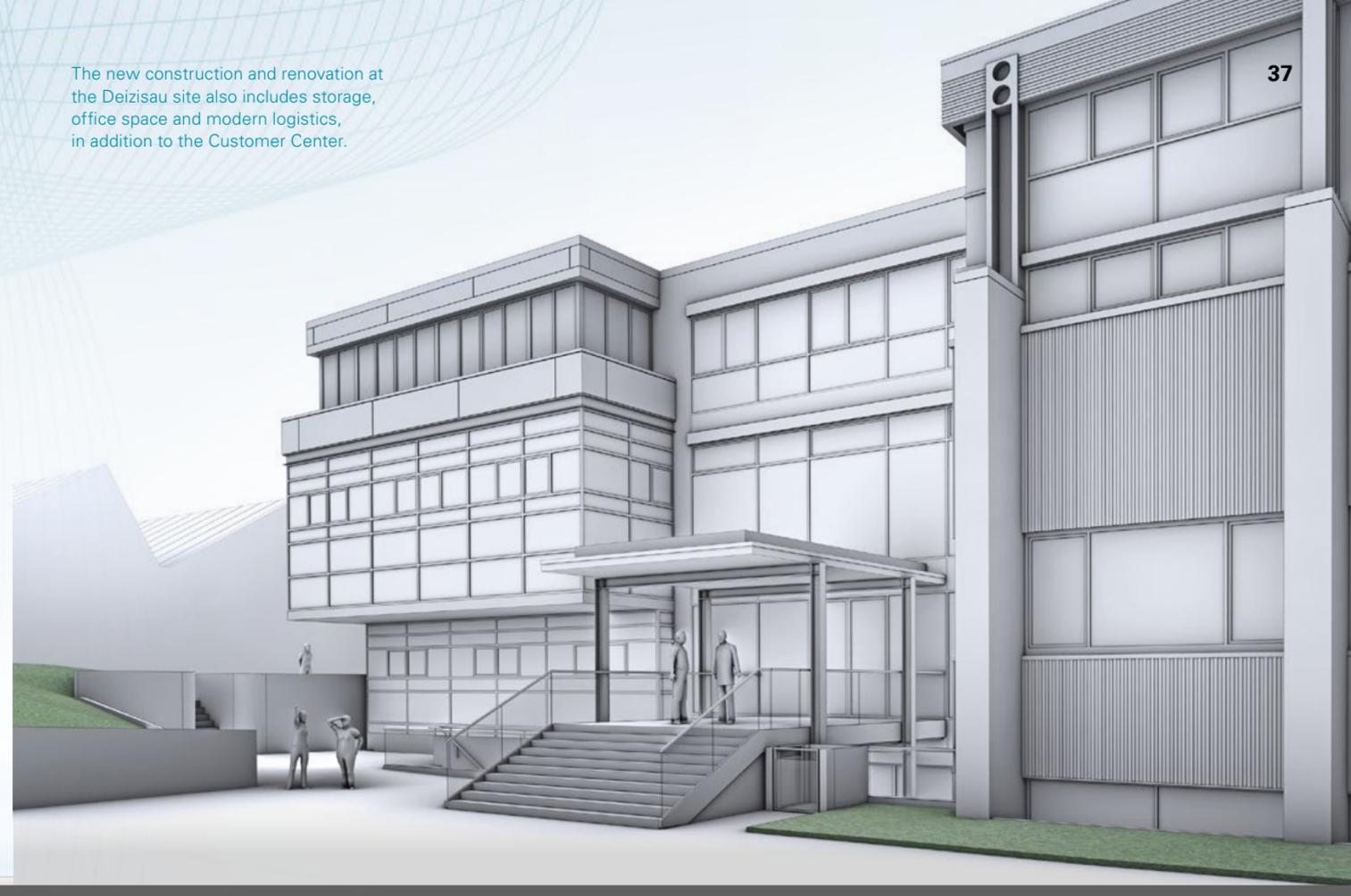


Watch the film now:
> www.index-group.com/ms-video

Investments in the future

Within the scope of the INDEX Group's corporate goals, we focus on global presence and internationalization. To achieve this, we're continually expanding our activities in the areas of sales, service, recruitment, and production. Over the past few years, we've made considerable investments that have contributed to supporting our customers throughout the world in all respects. Currently, we have initiated a number of measures that contribute to further advancing this development.

The new construction and renovation at the Deizisau site also includes storage, office space and modern logistics, in addition to the Customer Center.



New Customer Center for optimal services

» At the INDEX site in Deizisau, Germany, construction work for the new Customer Center is proceeding apace. As of Spring 2024, in addition to the training center with showroom, the Service department will also operate from there for our customers throughout the world. This represents an investment in the double-digit millions for further improvement of our services relating to all aspects of the machine. We consider our commitment in Deizisau as a long-term reinforcement of our worldwide Customer Support.

We are extending this location, where we manufacture our core components as well as design, assemble, and sell our multi-spindle automatic lathes, with additional important departments.

Reiner Hammerl // Managing Director Sales

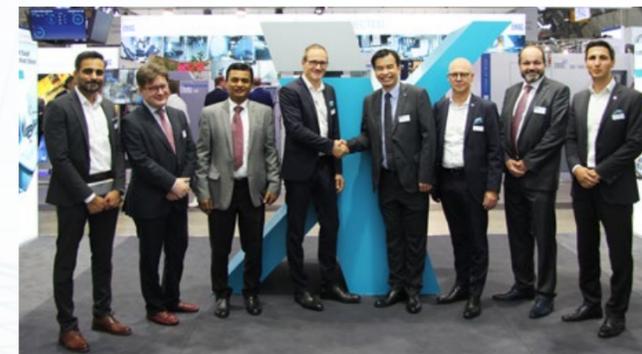


Production in Slovakia and China

» At the INDEX site in Malacky, Slovakia, we're currently extending our assembly and logistics surface area. Malacky has already been serving for quite some time as an integrated partner for the German production sites. In the future, mainly assemblies and machines with a high degree of standardization will be pre-assembled there and used machines will be reconditioned.

At our production and application plant in Taicang, China, assembly of local machine tools of types INDEX C200 and INDEX B400 for the Chinese market has recently been put into service (photo at top). High Tech—Designed in Germany—Assembled in China.

Dr. Dirk Prust // Technical Managing Director



MAKINO and INDEX—strong partners in machining

» To strengthen our presence in the Asian space, we started a sales and service cooperation with MAKINO this year. The specialist in the development of premium quality production technologies supports INDEX with its sales and service activities in Asia. In return, INDEX is helping the milling specialist similarly by offering its solutions in the European trade area.

Our new subsidiary in Bangalore, India, INDEX Machine Tools India Pvt. Ltd., recently started operating. Here too, it's about strengthening our presence in the Indian market for our customers. MAKINO actively supports us in this important market as well.

Mert Turan // Sales Manager Asia



Training as a strategic and social corporate task

» In our training center in Esslingen, Germany, we are currently training 150 young people for various professions and in dual courses of study. Particularly in current times where there is an increasing lack of skilled labor in Europe, it is important for manufacturers to promote the next generation of talent internally and according to their own needs.

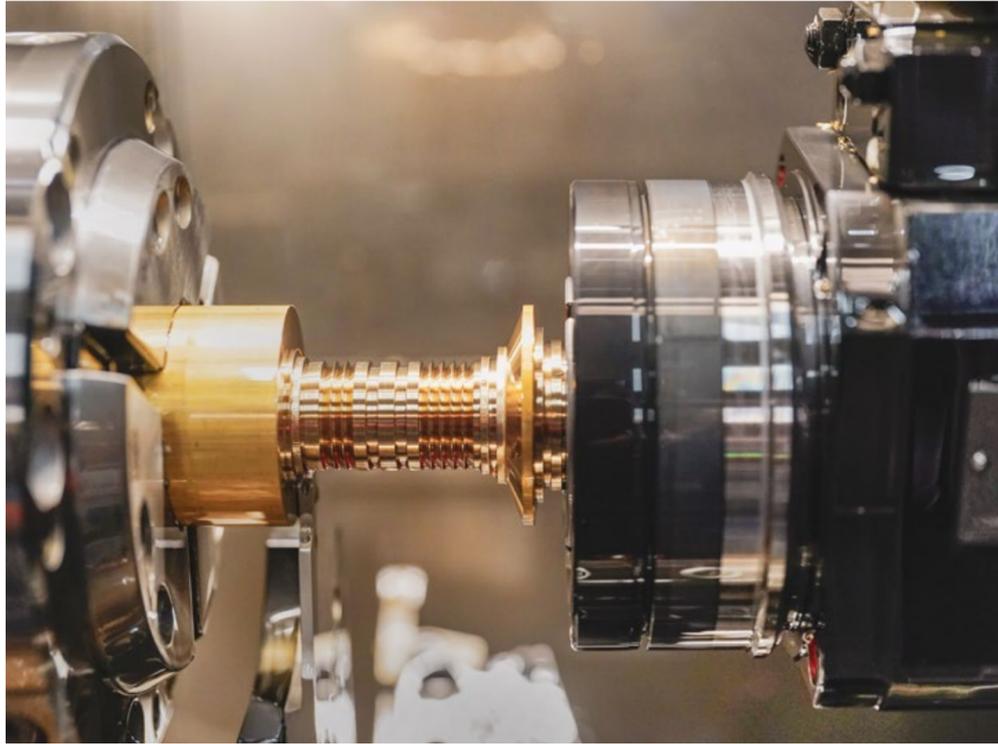
We have modernized our training center extensively. It now corresponds to a modern production facility. Consequently, training is dispensed under near-real conditions and includes complete production processes that the young people learn to master in full autonomy with a high level of motivation and creativity.

Harald Klaiber // Commercial Managing Director

Tradition and modernity

Six years ago, the management of the traditional company Adrien Riquier decided to implement an extensive modernization program. In addition to transforming the historical building into a modern showroom and building a brand new 5000 m² warehouse, the focus was set on optimizing and automating production. Several INDEX production lathes—some with integrated robot cells—constitute an essential element.

The extensive modernization work included the complete restoration of the historical Riquier red brick building. Today, it houses a modern showroom, a place for creative interaction with customers, suppliers, and partners.



Turning has been a core competence for more than 100 years at Adrien Riquier. In 2017, the management decided to modernize its processes with state-of-the-art automation and complete machining in a single setup.

Adrien Riquier, specializes in turned parts for plumbing solutions

The town Dargnies is located at the Bay of Somme, in France. This region is known for its pleasant living conditions, but also for its dynamic industrial base. The Adrien Riquier family business has been established there for more than 100 years.

This manufacturer of turned parts primarily produces brass fittings and joints, as well as components for plumbing equipment, hydraulic distributors, valves, and complete assemblies.

As Ludovic Bosschaert took over the industrial management of Adrien Riquier in 2017, the traditional company underwent a modernization that included its building and, above all, the production. "Over the past six years, we positioned ourselves in such a way that we are able to meet customer requirements with a great deal of flexibility today," says Ludovic Bosschaert. "Users often come to us with a sketch and special wishes. In the shortest possible time—often less than a week—our production team proposes a solution for volume production that works fast and reliably, even with unusual dimensions. This is possible thanks to our modernized machinery, such as the robot-assisted production lathe INDEX C200."

Efficient production in partnership with INDEX

Adrien Riquier's production hall houses six production lathes of INDEX ABC type and two INDEX C200—investments made in recent years. When asked why he relies on INDEX, the Managing Director answers as follows: "On the one hand, we maintain a very good partnership with INDEX and directly get quick, helpful support. On the other hand, INDEX machines are of high technical quality, so that we are able to manufacture our components efficiently in the long run."

As a prime example, he mentions the INDEX C200 automatic lathe with integrated robot cell: "This is a machine that combines a high level of flexibility with the performance of an automatic lathe. It enables us to perform efficient complete machining of demanding parts."

The Head of Production, Mickaël Bourgeois, also appreciates INDEX ABC production lathes that he uses to manufacture multi-sided contours and polygons, for example. He adds: "Due to the rational machining even for demanding material properties, it perfectly fulfills the expectations of our business." >

Software for optimized chip breaking

As a forward-looking measure, the production managers decided to have the ChipMaster software installed on all INDEX machines. It is used to optimize chip breaking and, according to Mickaël Bourgeois, is a perfect answer to a problem, i.e. the fact that new low-leaded and lead-free brass alloys tend to produce long chips.

Just how important INDEX machines are for Riquier, is shown among other things by the latest product line "Multicouche." These "multi-layer" products include a complete range of fittings that cover all the requirements from diameter 16 to 63 mm. Ludovic Bosschaert explains: "Each of these products consists of three components, which are made to 80% on INDEX machines. We favor the complete machining made possible by INDEX for these complex parts."

Important success factor: enthusiastic employees

For Ludovic Bosschaert, modernizing his plant also involves enhancing his team's expertise. Together with Pascal Debay, the INDEX Sales Manager for northern France and Belgium, he therefore agreed to a weekly, in-house training program, during which issues are discussed and

knowledge is consolidated. Machine operators, for example, are prepared for multiple-machine operation made possible by the optimized means of production.

The management's commitment towards employees is well received. They were also enthralled by their visit to the INDEX Open House in April 2023, from which they returned with many ideas and projects in head. X



The A. Riquier and INDEX teams (from left to right) Pascal Debay from INDEX France, Mickaël Bourgeois, Head of Production at A. Riquier, Ludovic Bosschaert, Managing Director at A. Riquier, Sophie Penigot, Head of Marketing at INDEX France, and Manon Pelletier, Head of Marketing at A. Riquier.



The perfect connection

The company Adrien Riquier was established in 1913 as a manufacturer of turned parts. Today, the family-owned business is run by the 4th and 5th generations. The 45 employees mainly produce brass fittings and a comprehensive range of components and modules for plumbing solutions. It comprises some 3,200 different items that are subject to a high level of requirements in terms of quality and surface quality. All processes—from development; to production, to shipping—take place exclusively at the headquarters in Dargnies. Following various modernization measures, Adrien Riquier was able to increase its turnover from €22 to 35 million over the past six years.

Adrien Riquier SA, 12-16 Rue Henri Barbusse, 80570 Dargnies, France
> www.riquier.fr



The robot-assisted INDEX C200 production lathe combines high flexibility with the performance of an automatic lathe. It enables us to perform complete machining of demanding parts

Ludovic Bosschaert is Managing Director at Adrien Riquier SA



More customer success stories online:
> www.index-group.com/success

News ticker

INDEX **ph HORN ph**

**Mastering processes—
technological partnership with Horn**

To achieve optimal machining results, you need a powerful machine, optimal tools, and the perfect machining process. As a leading machine manufacturer when it comes to technology, we are pleased to partner with Hartmetall-Werkzeugfabrik Paul Horn, Tübingen, Germany, with whom we can perfect our technological and solution skills.

The focus is on the following five selected processes: high-speed whirling, power skiving, bevel gear cutting, groove turning, and polygon turning. We will continue to develop the cycles for these methods in the future, while Horn adapts its tools to the respective task. As a result, we provide you with improved and new possibilities that help you master your upcoming machining tasks in the best way possible.

To make the efficiency resulting from our technology transfer accessible, we will be traveling together with Horn to the upcoming trade fairs and events. Come and visit us to be convinced by the quality and cost-effectiveness of our optimized processes.



Photo: HORN/Sauerermann



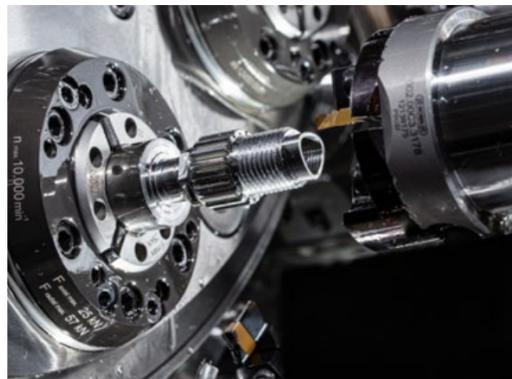
Top: Philipp Dahlhaus, Head of Product Management at Paul Horn GmbH and Dr. Volker Seilmeier from INDEX. Bottom: Paul Horn GmbH as guest exhibitor at our Open House in April 2023 in Reichenbach.



Bevel gear cutting
The complete machining of bevel gears on INDEX turn-mill centers and multi-spindle automatic lathes becomes possible with a special milling tool and the matching machine cycle.



Power skiving
This method is used on INDEX turn-mill centers and multi-spindle automatic lathes to produce internal and external gears as well as splines with high productivity and short process times.



Polygon turning
Having perfectly synchronized axes and appropriate tools are prerequisites. When this is the case, lathes can be used to produce regular non-round contours..



High-speed whirling
The simultaneous turning and whirling machining operation made possible by high speeds ensures improved cycle times, surface quality, and productivity.



New in the iXworld: an app to analyze your energy consumption

We will be introducing the new iX4.0 app **EnergyMonitor** at the EMO 2023. The app allows you to identify potential energy savings that contribute to reducing costs and CO₂ emissions. EnergyMonitor provides transparency about consumption values and helps you optimize the energy consumption of your production.

You can monitor consumption values in the EnergyMonitor app on the INDEX IoT platform iX4.0 as well as directly in the iXpanel Cockpit on your machine. The EnergyMonitor app will also be included in the free starter package iX4.0 go for new machines.

Visit us at the EMO 2023. Our experts will gladly assist you and answer your questions regarding the digitalization of your production. Find out the many possibilities EnergyMonitor offers and take control of your energy consumption.

Exhibition and event highlights 2024

- SIMODEC, La-Roche-Sur-Foron, France > March 04-08, 2024
- TECHNISHOW, Utrecht, The Netherlands > March 12-15, 2024
- Global Industrie, Paris, France > March 25-28, 2024
- CCMT, Shanghai, China > April 08-12, 2024
- SIAMS, Moutier, Switzerland > April 16-19, 2024
- Intertool, Wels, Austria > April 23-26, 2024

OPEN HOUSE 2024

- MACH TOOL, Posen, Poland > June 04-07, 2024
- IMTS, Chicago, USA > September 09-14, 2024
- AMB, Stuttgart, Germany > September 10-14, 2024
- JIMTOF, Tokyo, Japan > November 05-10, 2024

Legal notice

TURNINGpoint 10 // August 2023

Publisher

INDEX-Werke GmbH & Co. KG Hahn & Tessky
Plochinger Str. 92, 73730 Esslingen, Germany
Phone: +49 (0) 711 3191-0
info@index-group.com, www.index-group.com

Responsible for content

Reiner Hammerl

Project management, editing & layout

Rainer Gondek, Christine Sieber

Printing

Typodruck GmbH & Co.KG, Tuttlingen

Copyright

© 2023 INDEX-Werke GmbH & Co. KG Hahn & Tessky. All rights reserved. All images, graphics, and text is subject to copyright and other laws protecting intellectual property. No part of this publication may be copied, reproduced, or modified without express written permission from INDEX-Werke GmbH & Co. KG Hahn & Tessky.

For reasons of better readability, the masculine form has been chosen in the text, the information refers of course to all genders.

You can find us throughout the world online at **www.index-group.com**

Follow us

- index-traub.com/youtube
- index-traub.com/linkedin
- index-traub.com/xing
- index-traub.com/industryarena
- facebook.com/indexwerke
- index-traub.com/instagram



STRONG

STRONG FOR EVERY CHALLENGE AND

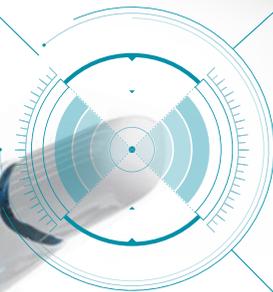
READY

READY FOR A CONNECTED WORLD



UNIVERSAL LATHES FOR PRECISE AND POWERFUL CUTTING

Turning length: 1,200 mm
Speed max.: 3,150 rpm
Chuck max.: 400 mm
Torque max.: 1,120 Nm



A lot of space for new machining options: INDEX B400, B500 and TRAUB TNA400, TNA500

Flexible universal lathes for precise and powerful machining—available with counter spindle and other attractive options. Now also available in long version with more tools.

www.index-group.com