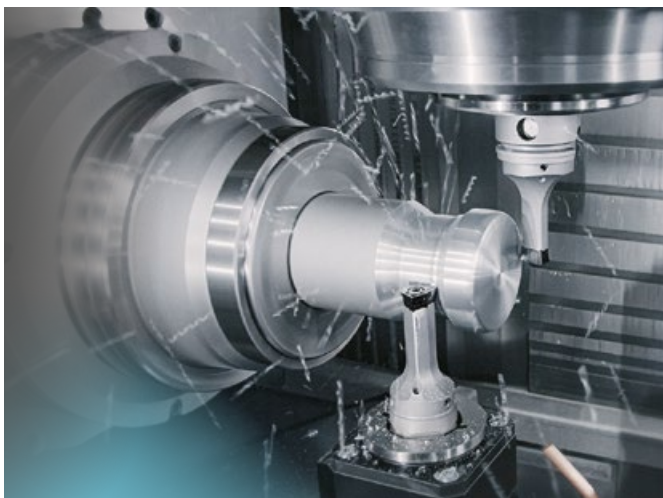


# TURNINGpoint



*better.parts.faster.*



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INDEX Corporation's 65,000-sq-ft headquarters in Noblesville, Indiana house most of our US-based staff and provides dedicated space for machine demonstrations, training, applications development, service and support.

Dear Customers and Partners,

The future of manufacturing belongs to those who can combine speed, flexibility, and automation without compromise. In the United States, this has become the defining reality. Success is no longer measured only by how fast a part can be made, but by how quickly you can get to the next job, adapt to new requirements, and maintain consistency under pressure.

At INDEX, we believe the real difference we deliver is not just in our machines, but in our people. Every department plays a role in driving our customers' success. Sales helps customers justify the right investment. Applications helps transfer knowledge directly into the shop environment, addressing complex challenges through new capabilities. Service ensures machines stay productive, with maximum uptime and long service life. Spare parts keeps supply moving quickly so shops can stay on schedule. Together, our teams combine to give INDEX customers an advantage no other OEM can match.

This is why INDEX is trusted not only for technology, but as a partner who stands behind every machine. It's our people working together — across every function — that allows us to surpass competitors and exceed expectations across the industry.

At EMO in Hanover, September 22–26, we will showcase this commitment. Visitors will see automation-integrated turn-mill centers, the cost-optimized TRAUB TNL12 “lean” and advanced processes such as High Dynamic Turning. We will also be highlighting our world-leading CNC multi-spindle technology, delivering unmatched productivity and precision for your production needs. Each reflects the same principle: flexibility and automation are not competing demands — they are the foundation of modern manufacturing leadership. We look forward to welcoming you in Hanover, and to continuing to shape a stronger, more competitive future for manufacturing together. 

**Michael Huggett**  
President & CEO, INDEX Corporation

The inner strengths of the TRAUB TNL12 "lean" include two fluid-cooled motor spindles, along with a tool turret and a back working unit, each with six stations.

## Slim, cost-effective, highly efficient

The TRAUB TNL12 sliding headstock turning machine is now also available in a "lean" entry-level version featuring a single turret and a back working unit. This flexible, cost-conscious yet efficient production turning machine is ideal for simpler, high-precision parts, such as those required in medical technology.

Like all other TNL machines, the TRAUB TNL12 is a highly flexible machine that can quickly be converted from sliding-headstock to fixed-headstock turning. As with the fully equipped TNL12, the lean version features a compact design with a fully integrated control cabinet. The gray cast iron machine bed and thermally symmetrical structure ensure lasting precision.

Two fluid-cooled 4.4 kW motor spindles (main and counter spindles) allow for speeds of up to 12,000 rpm, delivering impressive dynamics. These are further supported by lightweight clamping cylinders and a guide bushing made of carbon. On the lean model, the guide bushing is live and can be manually adjusted.

The tool turret is powered by a servomotor, enabling extremely short chip-to-chip times of just 0.3 seconds. As with all TRAUB sliding headstock turning machines, this model comes with a Y axis as standard. The turret's six tool stations can also accommodate twin tool holders. For internal machining (Z axis), the turret can be fitted with angled tool holders.

The back working unit consists of six tool stations, four of which are live, along with a flushing unit for removing finished workpieces.

These can be discharged directly into a container, for which the TNL12 "lean" is preconfigured. Optional discharge systems include a dual-container system or an eight-way selector.

On the TRAUB TNL12 "lean," cooling lubricant is delivered by a low-pressure pump rated at 8 bar. This keeps thermal input so low that cutting oil cooling is not required as standard. The machine comes with a 1.7 kW water/air spindle cooler, which can optionally be replaced by a 3.3 kW water/air or water/water spindle and cutting oil cooler. 



### TRAUB TNL12 "lean" Highlights

- ▶ Easy changeover from sliding to fixed headstock operation and vice versa
- ▶ Generously dimensioned and ergonomic work area
- ▶ Compact machine layout for high productivity per unit area
- ▶ High accuracy due to thermo-symmetrical design and cast iron machine bed
- ▶ High dynamics via powerful, fluid-cooled motor spindles
- ▶ Cost-effective entry-level model

Find out more:

▶ [www.index-group.com/tnl12lean](http://www.index-group.com/tnl12lean)

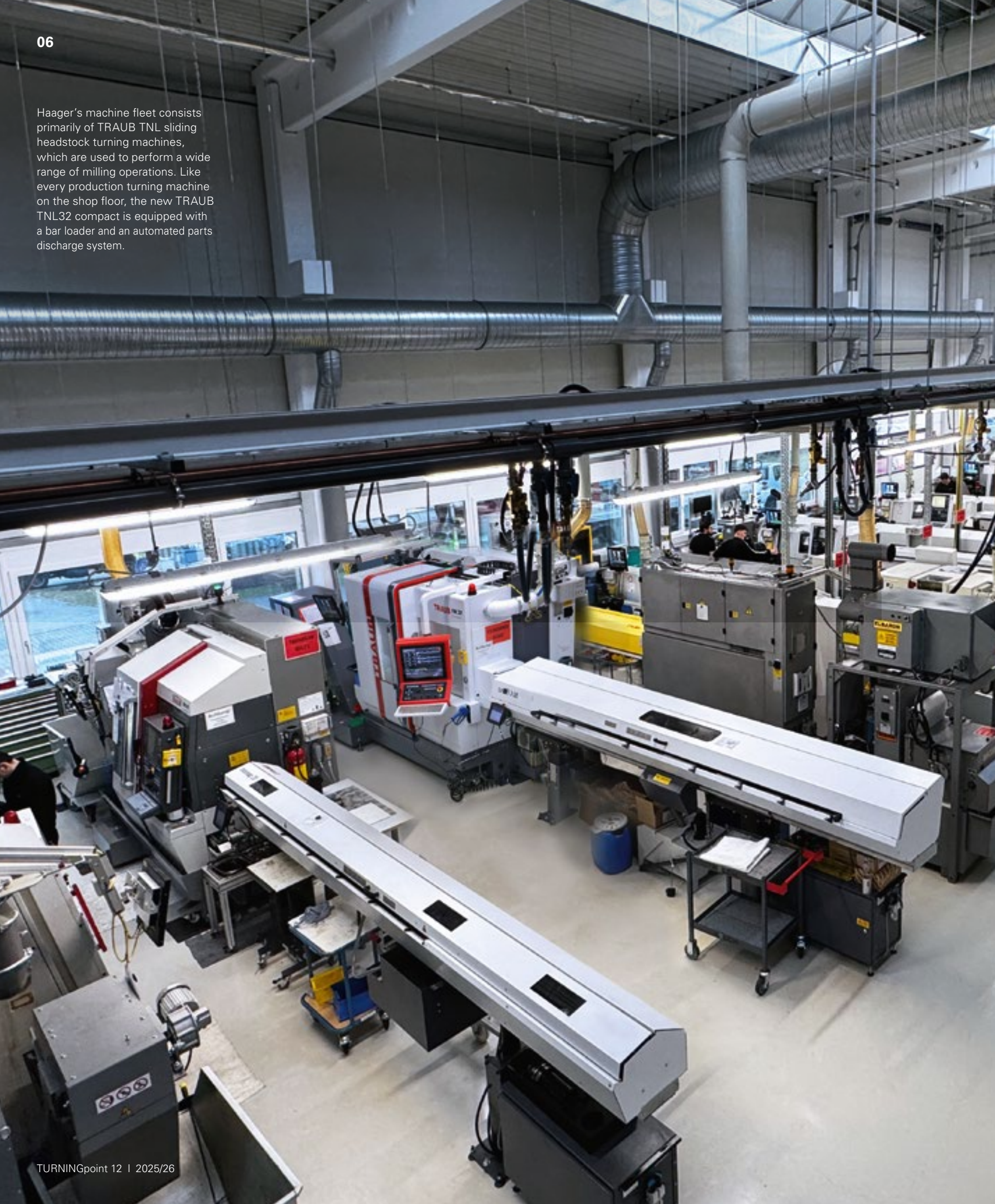


With our simplified version of the TRAUB sliding/fixed headstock turning machine, we are addressing users who value TRAUB's proven control technology, precision, and reliability, but who can do without a second turret, front working unit, or other additional components.

**Björn Graf** is Head of Product Lifecycle Management at INDEX



Haager's machine fleet consists primarily of TRAUB TNL sliding headstock turning machines, which are used to perform a wide range of milling operations. Like every production turning machine on the shop floor, the new TRAUB TNL32 compact is equipped with a bar loader and an automated parts discharge system.



## Built for turning, perfect for milling

Medical technology supplier Haager, based in Pforzheim, uses TRAUB TNL sliding headstock turning machines to achieve highly efficient milling. The results are impressive: Their machining specialists often reduce cycle times by as much as 50 percent on the production turning machine compared to what would be required on a milling center. Thanks to its high-end machines, including the new TRAUB TNL32 compact, Haager is also able to run production with minimal staffing for up to 16 hours a day.

"If they weren't so essential, you might miss them entirely." That's how Haager, the precision parts specialist from Pforzheim, draws attention to its products: tiny CNC-turned and milled components with raw material diameters ranging from 0.5 mm to 36 mm. "Everything we do is about micron-level precision and consistently achieving top quality," says Lorenz Haager, who has been running the fifth-generation family business since 2017 together with Clemens Winkler.

Founded more than 125 years ago, Haager was once a supplier to the jewelry industry. Today, over 90 percent of its business comes from leading players in the medical technology field. The company supplies an impressive range of components for minimally invasive surgery, spinal and dental implants, endoscopes, pace-makers, and microscopes. What all these parts have in common: They are production components that must be machined with extremely tight tolerances, flawless surfaces, and maximum cost-efficiency.

"The more complex the geometry, the better fit it is for us," says Lorenz Haager. "That's where

our expertise really shines. We love taking on projects that seem nearly impossible at first glance, and making them work."

### Milling on a turning machine: halving cycle times

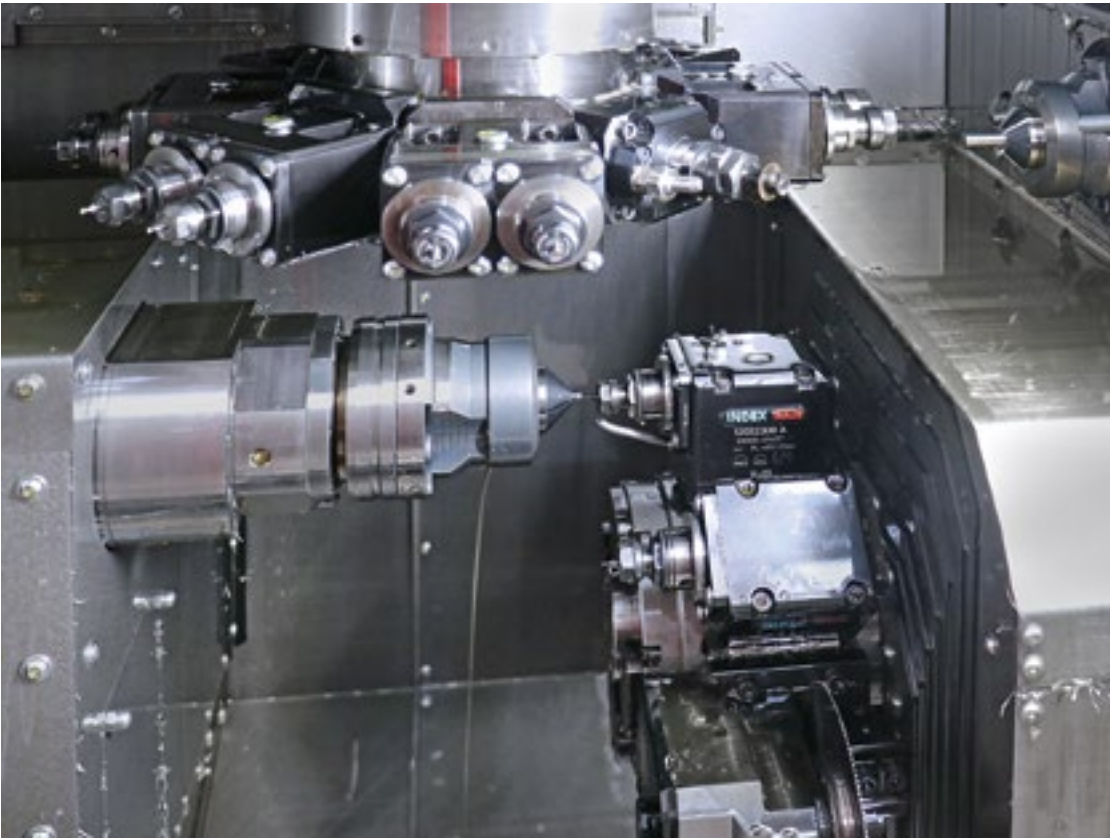
Over the past 15 years, Haager's production strategy has undergone a fundamental shift, driven by the idea of machining complex, mill-heavy parts entirely on INDEX turning machines. Haager envisioned a boost in productivity through parallel machining on dual spindles.

"The first machine that delivered perfect results was an INDEX C100 production turning machine we purchased in 2012," recalls Christian Sherebak. A trained metal cutting machine operator with prior experience on INDEX and TRAUB production turning machines, he was instantly enthusiastic about producing milled parts on turning machines. He explains the key advantage: "A milling machine may have stronger cutting power, but it can only handle one operation at a time. There's no simultaneous back end machining." ➤



We love taking on projects that seem nearly impossible at first glance, and making them work. Whether it's technical challenges, tight deadlines, or economic constraints, we draw on our years of experience and advanced machine fleet to make it happen.

**Lorenz Haager** is Managing Director of precision parts manufacturer Haager in Pforzheim



At Haager, the TRAUB TNL32 compact is used to machine parts with cycle times of up to 48 minutes and zero turning operations. This is made possible by its configuration: nine linear axes, two turrets (the upper one with B axis), a four-station back working unit, and an autonomous counter spindle.



With the purchase of our first TRAUB TNL12, our concept proved itself 100 percent. We took a part that had originally been milled and cut the cycle time in half—without sacrificing quality.

**Christian Sherebak** is Turning Innovation and Project Manager at Haager



More customer success stories online:  
[www.index-group.com/success](http://www.index-group.com/success)

Success with TRAUB TNL machines

Haager’s machining specialists soon realized that the TRAUB TNL sliding headstock turning machines were even better suited to their needs than the INDEX C100 production turning machine, despite the latter still performing flawlessly after more than 70,000 hours of operation and producing a dedicated family of parts around the clock. “The TRAUB TNL series offers more flexibility for small-diameter parts, which is essential for us as a contract manufacturer. Why? “It can be converted from a sliding headstock to a fixed headstock turning machine, and back again, in just 15 minutes,” explains Christian Sherebak, who now works as Innovation and Project Manager, focusing on how to execute new orders as efficiently as possible on turning machines.

Haager bought its first TRAUB TNL12 in 2013. “That machine proved our concept 100 percent,” Sherebak recalls. “We took a part that had previously been milled and cut the cycle time in half, with no drop in quality.” That was the starting gun for significant investment in TRAUB TNL turning machines. Today, Haager runs eleven TNL12s, seven TNL18s, eight TNL20s, two TNL32s, and one TNL32 compact in nonstop operation. Christian Sherebak

describes the strengths of each machine type: “The TNL12 is incredibly versatile; we use it for simple parts in ultra-short cycle times, or for small, complex parts with a high proportion of milling.”

The TRAUB TNL18-7B, equipped with a B axis, marked Haager’s entry into complex milling. “Because it’s so quick to retool, we mostly use it for smaller-volume repeat parts,” says Sherebak.

He prefers the TNL20-9B and TNL20-11 for pure milling jobs due to their strong milling power and the independence of their sub-systems. He also uses them for deep-hole drilling and machining tough materials, benefiting from the high cooling capacity of the Eco-Fluid system.

TNL32 compact expands milling capabilities

The latest addition to the fleet is the TRAUB TNL32-9B compact. “This machine is based on the TNL20-9B design, but with key enhancements, especially for milling,” says Sherebak. Chief among these are the extended Y axis travel of +/-50.8 mm on the upper turret, single drives on both turrets, and significantly higher motor output. “Now we can equip all eight

stations on both turrets with double tool holders,” says Sherebak. “Before, we’d sometimes be unable to run a part on the turning machine because we were short a station or two. That problem is a thing of the past with the new TNL32 compact.”

Production Manager Markus Army highlights the excellent thermal stability of the TNL32 compact: “Despite its high drive power and speeds, the machine remains thermally stable, which means it maintains micron-level precision over long production runs.”

To enable automated operation, INDEX offers both a bar loader and various options for workpiece unloading. “Every one of our production turning machines is equipped with a bar loader. That’s essential to our manufacturing philosophy,” says Markus Army. At the TRAUB TNL32 compact, Haager uses the integrated INDEX automation system, where a gripper removes finished workpieces and places them onto a discharge conveyor. All other TRAUB machines are also equipped with suitable automation for



workpiece removal. The TRAUB TNL20-11, in addition to a bar loader, features the INDEX iXcenter.

With this level of automation, the machines run unattended overnight. Production Manager Markus Army explains: “Our staff only work day shifts, and after that, the machines continue to run fully automatically for up to 16 hours. That’s how we keep unit costs low.”

The more demanding the machining challenge, the more motivated the Haager team—from left to right: Christian Sherebak, Turning Innovation Manager; Marc Fischer, INDEX Regional Sales Manager; Markus Army, Production Manager; Lorenz Haager, Managing Director; Rainer Gondek, INDEX Head of Marketing.



Photo: Haager GmbH & Co. KG

Precision driven by passion

Haager Micro-Mechanik is a CNC contract manufacturer that thrives on complex machining challenges. Originally rooted in the jewelry industry, the Pforzheim-based company now earns more than 90 percent of its revenue from medical technology. Their range of services includes part design consulting for optimized production, CAD feasibility studies, and advanced machining on state-of-the-art equipment. The result: high-precision production components with perfect surfaces—delivered as custom individual parts or preconfigured assemblies. Haager employs around 70 people and generated roughly 13 million euros in revenue in 2024.

Haager GmbH & Co. KG, 75177 Pforzheim, Germany  
[www.haager.de](http://www.haager.de)

The TRAUB TNK40-8B features two tool turrets, with the upper turret equipped with an additional B axis.

## Highly productive, minimal footprint

Looking for a machine that provides efficient fixed headstock turning on workpieces with medium to high complexity? Take a look at the new TRAUB TNK40 production turning machine—purpose-built for exactly that.

The TRAUB TNK40 production turning machine is the latest addition to the INDEX lineup, introduced just a few months ago. A pure fixed headstock turning machine, it is based on the TRAUB TNL32 compact sliding/fixed headstock turning machine, but instead of a sliding headstock for Swiss-type turning, the TNK40 features a fixed headstock. The low-vibration bar guiding system and enhanced dynamics deliver perfect machining results and exceptional productivity.

### Spindle clearance up to 40 millimeters

Like the TRAUB TNL32 compact, the TNK40 is equipped with two identical work spindles (max. 8,000 rpm, 9.9 kW, 19 Nm at 100% DC) and two tool turrets, each featuring X, Z, and Y axes. Compared to the sliding headstock version, the TNK40 eliminates the Z1 axis of the main spindle, the guide bushing carrier, and the short turning bushing. Instead, the spindle clearance has been increased to a maximum of 40 mm.

Despite its compact footprint, the TRAUB TNK40 delivers high power density for economical production. Its uniquely spacious work area in this machine class is vertically designed for optimized chip flow and excellent accessibility during setup. It provides the necessary degrees of freedom and ensures high process reliability with minimal setup effort. ➤



### What sets the TRAUB TNK40 fixed headstock turning machine apart

- ▶ Robust thanks to a fixed headstock
- ▶ Excellent milling performance with a stable compact-shank tool holder system and optional single drives
- ▶ Low-vibration and easy bar guidance
- ▶ Versatile automation solutions—from bar loader to INDEX iXcenter robot cell
- ▶ Highly productive thanks to simultaneous machining with two, three, or four tools
- ▶ Optimal workpiece quality due to high thermal and mechanical stability

Find out more:

➤ [www.index-group.com/tnk40](http://www.index-group.com/tnk40)



Our new TRAUB TNK40 production turning machine stands out with its high productivity and excellent turning and milling characteristics, which are made possible by the compact shank tool holder system and single drive at the turret.

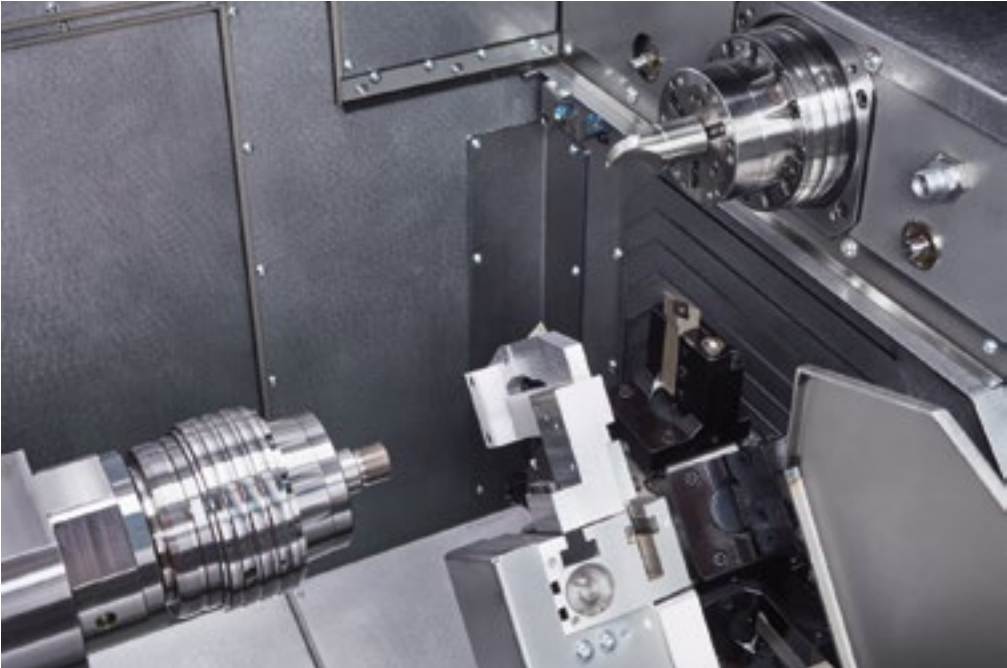
**Oliver Löffler** is Project Manager in the development of INDEX single-spindle production turning machines





Various workpiece handling options can be combined. For example, a linearly traversing, swiveling gripper can hand off the finished workpiece to the iXcenter during secondary processing time without opening the work area door ("handshake").

**Oliver Löffler**  
on workpiece handling  
with the TRAUB TNK40



The machine's crucial productivity advantage is the result of its high dynamics. Its gray cast iron machine bed and vibration-damping machine feet provide the foundation. The machine's kinematics allow for effective and simultaneous machining with two, three, or four tools, while its high rigidity and thermal stability ensure consistently high workpiece quality.

**Customizable with eight linear axes, B axis, and front working unit**

Like TRAUB's sliding headstock turning machines, the new fixed headstock turning machine features a modular design, allowing customers to choose from three variants: TNK40-8, TNK40-8B, and TNK40-10. While the TNK40-8 features eight linear axes, two turrets (each with eight stations, max. 12,000 rpm, 1.5 kW), and an autonomous counter spindle, the upper tool turret on the TNK40-8B is equipped with an additional B axis.

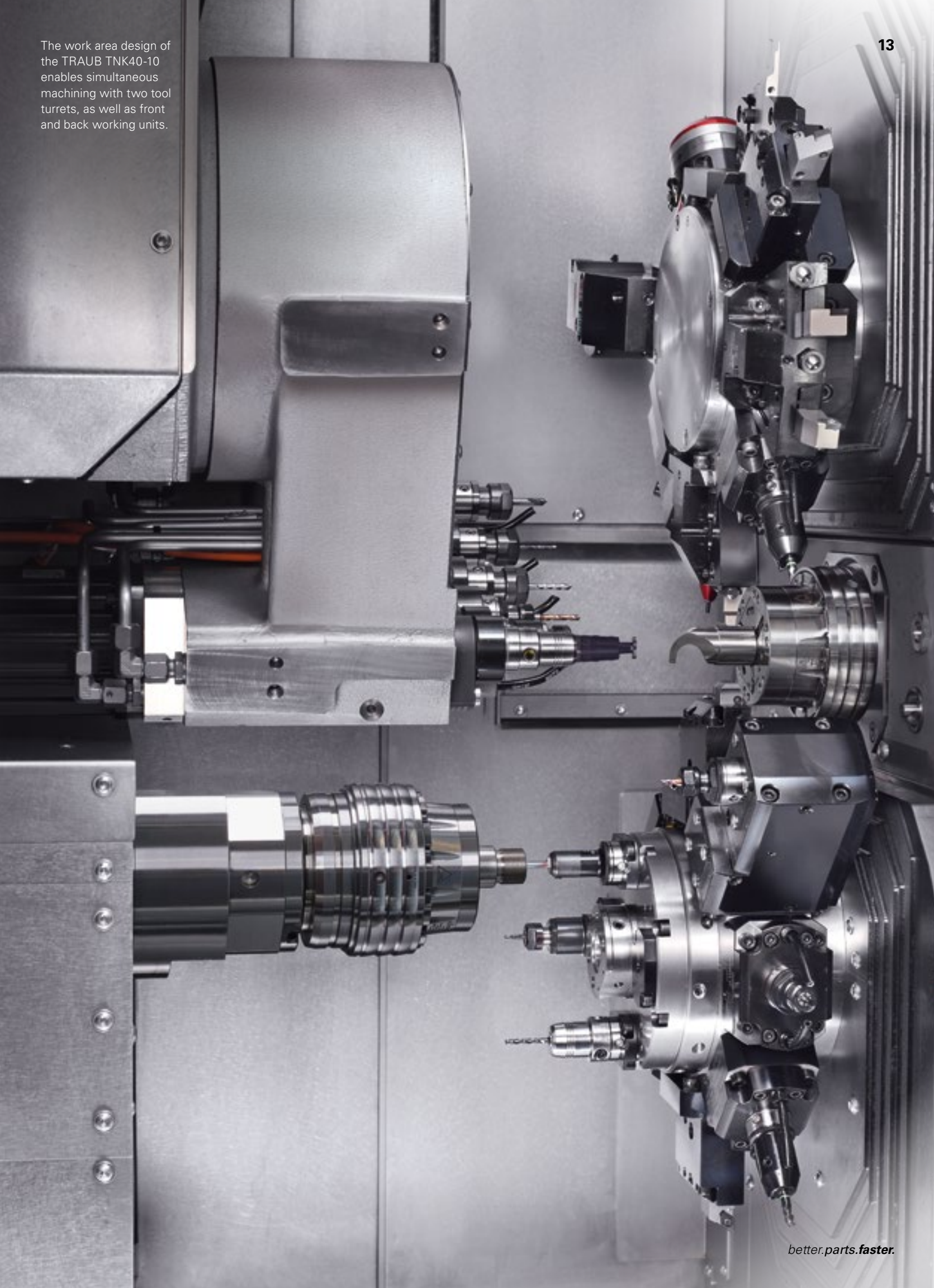
The TNK40-10 variant includes an additional front working unit with autonomous Z and X axes as well as an NC swivel axis, which also serves as an interpolated Y axis. The second upper tool carrier for back end machining includes six stations. Three of the tool stations are live, and one can even be equipped with a double holder. For all configurations, an optional back working unit with four stations for internal and external machining can be mounted on the lower turret.

**Latest control and automation technology**

Equipped with the latest TRAUB TX8i-sv8 CNC control, the TRAUB TNK40 is fully equipped to meet the demands of the digital transformation in manufacturing. Its 19" touch-screen, which can be swiveled and shifted laterally, is perfectly suited for iXpanel functionalities, providing seamless access to networked production environments. Naturally, a variety of automation options are available for the TRAUB TNK40—from bar loaders (long and short loaders) to integrated workpiece unloading units and the INDEX iXcenter S robot cell. This enables blanks and/or finished parts to be loaded and unloaded quickly, safely, and flexibly. The INDEX iXcenter S docks ergonomically to the machine. It can be moved easily to the left during the setup process, allowing unobstructed access to the work area.

The new TRAUB TNK40 production turning machine thus offers outstanding performance for applications in automotive, medical technology, and mechanical engineering. **X**

The work area design of the TRAUB TNK40-10 enables simultaneous machining with two tool turrets, as well as front and back working units.

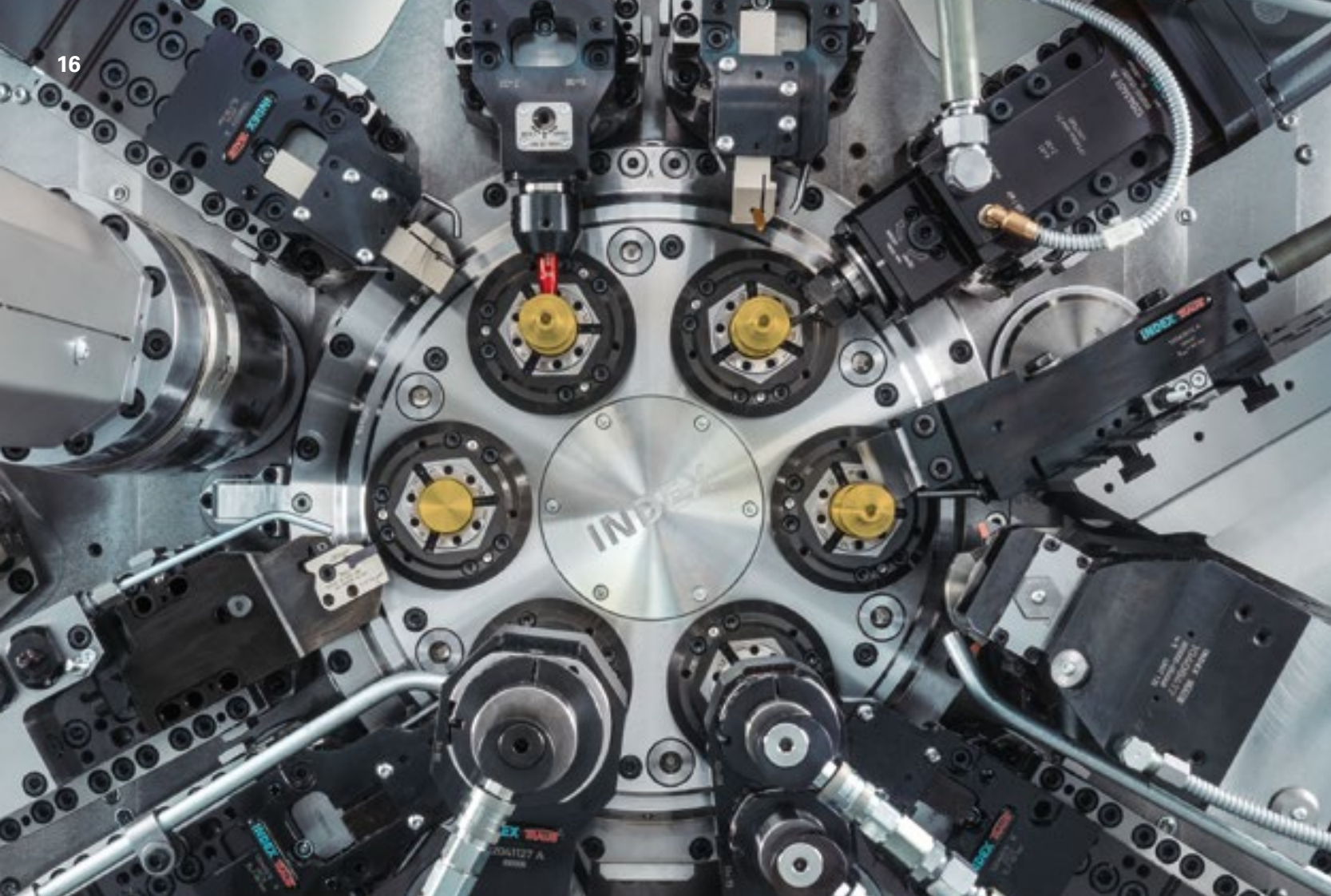


## Productive manufacturing

High-quality machines—like the turning and turn-mill centers from INDEX and TRAUB—are built for decades of use. But over time, machining requirements often change, making machine modifications necessary. At the same time, new hardware and software solutions have emerged, opening up more efficient and advanced production possibilities. So why not take advantage of them?

We make retrofitting easy. Our team consists of specialists with in-depth expertise in every INDEX and TRAUB machine type, even long after the last machine of a series has been delivered. Whether you need a standard solution or a custom retrofit, a single machine or a large-scale project, we'll work closely with you to bring your ideas to life.

Of course, we also use our own machines in-house, and retrofit them as needed. One example: our INDEX R200 turn-mill center, equipped with two powerful milling spindles that allow simultaneous machining on both main and counter spindles. By retrofitting it with a robot cell—the INDEX iXcenter M—we've automated the R200 for round-the-clock operation. The result is a boost in productivity—and valuable hands-on experience that directly benefits our customers. **► Read more about our retrofit service from p. 22.**



## No more lead in brass—what does this mean for machining?

The end of lead-containing metals is on the horizon. Stricter regulations in drinking water standards, as well as the RoHS and REACH directives, are expected to lead to an EU-wide ban on the use of lead as an alloying element in steel and brass starting in 2028. This will have a major impact on users of conventional standard brass, which has traditionally contained two to three percent lead to facilitate easy machining. What lead-free alternatives are available? And what does this mean for your machine fleet?

The issue of lead-free brass is a pressing concern not only for machining companies, but also for machine and material manufacturers. Take Diehl Brass Solutions, based in Röthenbach, Germany, for example: according to its own statements, it is the leading brass semi-finished product manufacturer in Germany and the world's largest producer of special brass. When it comes to lead-free materials, the company positions itself as a market and technology leader.

Its portfolio has long included a variety of lead-free brass alloys, such as the cost-effective copper-zinc alloy CuZn42. However, processing these materials requires caution: Without

additional precautions in terms of machine setup and tooling technology, large chip tangles can quickly form during machining. These can disrupt or even halt the continuous production process and must then be removed manually.

### Silicon or magnesium instead of lead

A significantly more machinable alternative is Diehl's brass alloy Cuphin (CW724R), which replaces lead with a portion of silicon. Technically, it's a good solution, but not without a drawback: The high copper content of 76 percent makes Cuphin considerably more expensive than conventional standard brass in terms of metal price. ➤



Machining lead-free brass places greater demands on tools, machines, and control software.



The latest development is a material called "eZeebrass." Dr. Volker Bräutigam, responsible for Business Development at Diehl Brass Solutions, explains: "We discovered that by adding magnesium, it's possible to create a phase in the microstructure that promotes chip breaking. The advantage: We only need 0.4 percent magnesium and can keep the copper content at 58 percent. That gives us a significant cost benefit compared to Cuphin."

### A challenge for machining technology

The customer has a choice. But whether it's CuZn42, Cuphin, eZeebrass, or another lead-free alloy—none of them can be used as a one-to-one replacement for conventional leaded brass when it comes to machining. What's needed are CNC-controlled machines whose cutting parameters, machining cycles, and pe-

ripherals can be continuously optimized to suit the new material. That's why INDEX works closely with material and tooling manufacturers to develop tailored solutions, which are also presented to users at dedicated roadshows.

Real-world insights are shared in the following article, based on a visit to our customer Firner Trautwein, a precision turned parts manufacturer. For high-volume production, the company relies primarily on INDEX production turning machines, which it sees as the ideal foundation for a future-ready setup.

Read the following interview to find out why INDEX CNC production turning machines, and especially multi-spindle turning machines, are particularly well suited to machining lead-free brass. ✂



Investing in INDEX CNC multi-spindle turning machines is a key step toward future readiness. These machines enable efficient machining of lead-free materials, are well suited even for relatively small batch sizes, and offer maximum flexibility when it comes to machining capabilities.

**Bernd Reutter** is Head of Technical Sales for multi-spindle turning machines at INDEX



*Mr. Reutter, which features of the INDEX CNC multi-spindle turning machines are particularly important for reliably machining lead-free brass? And how do they differ from cam-controlled machines?*

In many respects, our CNC-controlled multi-spindle turning machines offer significant advantages over cam-controlled systems. When machining lead-free brass, for example, it's crucial that the spindle speed and feed rate can be programmed independently for each spindle position and every cutting edge. On our machines, these parameters can even be adjusted during the actual cutting process.

The result is optimized chip breaking—a key factor for process reliability when working with lead-free brass. This is only possible with CNC control, and in some cases with our optional ChipMaster software. This type of process optimization also leads to excellent surface quality, short cycle times, and longer tool life.

*New materials aren't the only challenge; manufacturers also face smaller batch sizes, greater part variety, and increasing component complexity. How do INDEX CNC multi-spindle turning machines address these demands?*

In recent years, we've made the setup of our multi-spindle turning machines significantly easier, for example through various features such as improved tool holders and programming with the Virtual Machine. As a result, jobs with quantities as low as 10,000 parts are already economically viable. And when it comes to part families, it can make sense to use an INDEX CNC multi-spindle turning machine for runs as low as 2,000 parts. For comparison, cam-controlled multi-spindle turning machines typically only become cost-effective at 100,000 parts and above.

When it comes to part complexity, INDEX CNC multi-spindle turning machines are not only ideal for conventional turning operations; they're also perfectly suited for milling, polygon and poly-lobe turning, power skiving, and gear hobbing.



Firner Trautwein uses CNC multi-spindle turning machines (e.g., the INDEX MS32-6) to machine complex brass parts with high precision and efficiency.

## CNC multi-spindle turning machines meet the lead-free challenge

Their strengths lie in short cycle times and the versatile capabilities to machine complex parts with precision—even from difficult-to-machine materials like lead-free brass. We're talking about CNC-controlled INDEX multi-spindle turning machines, which have long outperformed their cam-controlled predecessors in many respects. This is confirmed by precision turned parts manufacturer Firner Trautwein, which operates INDEX CNC multi-spindle turning machines at its plants in Zeil am Main and Dunningen, Germany, and sees itself well-equipped for the future.



Since the trend in our key industries—automotive, electronics, communications, and sanitary technology—is clearly toward greater part complexity, along with strict requirements for precision and surface quality, the INDEX CNC multi-spindle turning machines are the perfect solution for us.”

**Sebastian Foltes** is Plant Manager at Firner Trautwein

Firner Trautwein is known for producing high-quality precision turned parts. Andreas Müllerleile, Head of Sales and Materials Management: “We have many years of experience machining brass, steel, stainless steel, and aluminum, and we're happy to share that expertise with our customers. Across our sites in Dunningen and Zeil am Main, we employ highly skilled personnel and operate state-of-the-art machines and systems. With over 100 production turning machines, we're ready to meet any challenge in complexity and batch size.”

For many years, Firner Trautwein manufactured millions of brass parts in Zeil am Main, Germany, exclusively on rotary transfer machines. In 2006, these were supplemented with several cam-controlled multi-spindle turning machines. “But the future of our volume production clearly lies with CNC-controlled multi-spindle turning machines,” explains Plant Manager Sebastian Foltes. “Cam-controlled machines are increas-

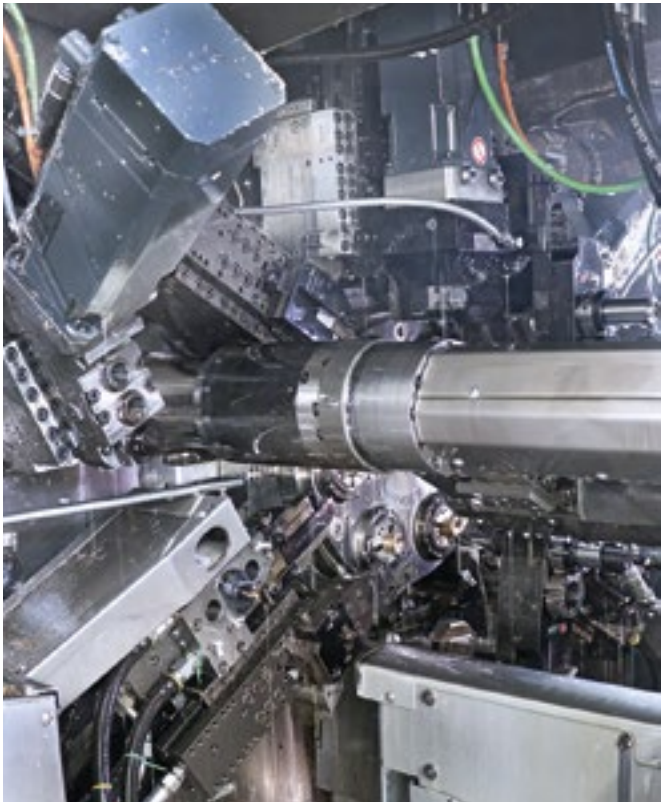
ingly hitting their limits due to rising customer demands, increasing part complexity, and the use of modern lead-free materials. And retooling them is time-consuming and requires specially qualified personnel—whom we're lucky to still have.”

### 25 years of partnership with INDEX

The first INDEX CNC multi-spindle turning machine was brought into the Zeil am Main facility in 2015. But even before that, INDEX was no stranger to Firner Trautwein. “Our collaboration with INDEX began at our plant in the Black Forest,” says Andreas Müllerleile. “In 2000, we invested in our first INDEX ABC production turning machine. We were so satisfied with it that we went on to purchase additional production turning machines, like the INDEX C65, G200, C200, and an INDEX MS32 multi-spindle turning machine. INDEX is a global leader that continually develops its machines,” the executive adds. “That means outstanding



Diehl Brass Solutions is a long-standing supplier of brass rods, which Firner Trautwein processes on its CNC multi-spindle turning machines.



Left: CNC multi-spindle turning machines offer a wide range of machining capabilities and can be operated economically even for batch sizes as low as 10,000 units.

Right: At Firner Trautwein, the INDEX multi-spindle turning machines are equipped with an automation cell, where a robot removes the fully machined parts and neatly places them into special containers.



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reliability, process stability, and precision in the micron range. What also matters to us: INDEX is a reliable partner with a solutions-focused approach and excellent support, both technically and in terms of service.”

The positive experience in Dunningen helped justify further investments in CNC multi-spindle turning machines like the INDEX MS40-6, MS22-6, and, most recently in 2021, the INDEX MS32-6. Sebastian Foltes: “We’re a contract manufacturer and need to respond quickly to customer demands. Since the trend in our key industries—automotive, electronics, communications, and sanitary technology—is clearly toward greater part complexity, along with strict requirements for precision and surface quality, the INDEX CNC multi-spindle turning machines are the perfect solution for us.”

**Almost as flexible as a single-spindle turning machine, but with shorter cycle times**

INDEX Regional Sales Manager Markus Göbel summarizes the technical strengths: “The latest INDEX MS32-6 features a compact spindle drum with a Hirth coupling that ensures maximum precision. The six motor spindles are fluid-cooled, offer a clearance of 32 mm, and allow continuously variable speed control up to

8,000 rpm. You can program the optimal speed for each of the six spindle positions and each of the twelve cutting edges.” This is a key advantage for Sebastian Foltes: “It reduces cycle times, extends tool life, improves the surface quality, and gives us better control over chip breaking—even with difficult-to-machine alloys. That’s something cam-controlled production turning machines simply can’t offer.”

**The challenge: lead-free brass**

One reason for investing in CNC multi-spindle turning machines is the ability to machine lead-free materials, which are expected to become the standard for many components in the future.

Brass is Firner Trautwein’s number one turning material. Traditional MS58 brass, with two-to-three percent lead, is very machinable. But in electrical engineering and the sanitary industry, lead-free alloys are becoming more common. If no additional precautions are taken, machining lead-free brass tends to produce long, stringy chips that quickly wrap around the tool and workpiece like a tangled mass. “That disrupts the machining process,” explains Müllerleile. “To avoid chip entanglement when working with lead-free brass, it’s important to ensure the machine tool uses high cooling lubricant



pressure and special CNC cycles that promote early chip breakage, for example, with INDEX’s ChipMaster software. The tool itself should also feature an efficient chip-breaking geometry.”

**Magnesium-alloyed brass: lead-free and easy to machine**

A new lead-free brass alloy called “eZeebrass” is designed to improve machinability. Volker Bräutigam from Diehl Brass Solutions explains: “We discovered that by adding magnesium, it’s possible to create a phase in the microstructure that promotes chip breaking.”

For Sebastian Foltes, that sounds promising, but he emphasizes that traditional leaded brass, which has been used for decades, cannot simply be swapped out one-to-one for eZeebrass: “Any new alloy will interact a bit differently with the tool and the machine compared to materials we’ve known and used for years. That’s also true when switching from leaded to lead-free materials. We need to adjust our processes to suit the new material.”



Photo: Firner Präzisionsteile GmbH



Markus Göbel, Regional Sales Manager at INDEX, adds: “Last year, we hosted joint workshops with Diehl and cutting tool manufacturer Paul Horn, where attendees could get hands-on experience with both our CNC production turning machines and the new eZeebrass alloy. And we’ll continue working closely with well-known material suppliers to fine-tune cutting parameters, machining cycles, and peripherals, so users can achieve top results with this material.” ✕

From left to right: Plant Manager Sebastian Foltes and Authorized Representative Andreas Müllerleile of Firner Trautwein rely on a close partnership with Diehl Brass Solutions (represented by Dr. Volker Bräutigam) and INDEX (represented by Markus Göbel).

**An innovative company with tradition**

The precision turned parts manufacturer Firner Trautwein—founded as Pankraz & Ullmann in Bamberg, Germany—has been operating as a service provider for metal turning for over 160 years. Today, the company, which employs 100 people, operates at two sites, in Dunningen and Zeil am Main, with around 10,000 square meters of production space and a modern machine fleet. Complex and simpler components are manufactured from brass, steel, stainless steel, aluminum, and copper—including lead-free versions—in small and large batch sizes, with diameters ranging from 3 to 65 mm. Customers include leading companies from the automotive industry, electrical and communications technology, and the sanitary sector.

Firner Präzisionsteile GmbH, 97475 Zeil am Main, Germany  
➤ [www.firner-trautwein.de](http://www.firner-trautwein.de)



## We future-proof your machine!

You've got a new job on the horizon, and your INDEX or TRAUB machine needs a steady rest, tailstock, additional assemblies, or peripheral equipment? Looking to add software options, automation solutions, or safety features? No problem at all. Our retrofit team will tailor your machine to meet your exact requirements.



Our team stands out for its extensive machine and process expertise, enabling us to fulfill virtually any customer request when it comes to retrofitting, upgrading, or modernizing any INDEX or TRAUB machine.

**Andreas Ressel** has been working in the retrofit division for 20 years and primarily supports the INDEX multi-spindle series.

The metal machining market is constantly evolving. Parts are becoming more complex, materials more demanding, product variants more numerous, and new legal or customer-specific requirements are continually emerging—not to mention the ongoing pressure to remain competitive in both cost and quality.

### A cost-effective alternative

Manufacturing operations are under constant pressure to adapt their machine fleets to ever-changing demands. But when budgets are tight or incoming orders are uncertain, investing in new equipment is often difficult to justify.

That's where retrofitting proven existing machines can become a highly attractive option. "Here at INDEX in Deizisau, we have a team of seven experienced specialists dedicated exclusively to retrofitting INDEX and TRAUB machines," explains Maximilian Berger, who heads the department. "Each team member has their own area of expertise; some focus on TRAUB machines, others on INDEX multi-spindle turning machines. Some handle retrofits for INDEX B-series machines or the production turning machines in the C and ABC series, as well as the G, R, and V-series. Our knowledge spans both historical machine designs and the very latest components." ➤



The retrofit hub at the INDEX iXperience Center: This is where the retrofit specialists plan and coordinate all projects, which are then implemented on-site by a service technician at the customer's location.

Since all INDEX and TRAUB machines are designed to be robust and long-lasting across all assemblies, they are well suited to a wide range of retrofit options, both from an economic and a sustainability standpoint. "In most cases, customers come to us when a product change in their production requires additional machine functions," Maximilian Berger notes. "The focus is often on retrofit-

ting machine assemblies such as a steady rest or a tailstock. We also convert turrets, for instance from VDI25 to VDI30." In multi-spindle turning machines especially, increasing part complexity may require additional Y axes. These, too, can be retrofitted with ease.

### Software options unlock new potential

Many customers turn to the retrofit department when looking to modernize their machine fleet. "This often happens when they've purchased new machines and want us to bring their older models up to the same software level," explains Maximilian Berger. Software retrofits are in high demand because they typically require minimal effort while delivering a significant impact. Common upgrades include integrating the machine into the company network, often with the addition of hardware and software for machine and production data acquisition (MDA/PDA), along with suitable interfaces such as OPC Unified Architecture (OPC UA). Popular options also include tool monitoring, remnant material detection, and additional software modules for C axis positioning or the Transmit function for face machining. ➤



Our team plans the retrofitting of existing INDEX and TRAUB machines, from the initial inquiry and technical advice through to implementation. INDEX service technicians carry out the necessary work on site.

“For certain machine types, we also offer additional technology options that allow users to perform operations such as grinding, gear hobbing, or power skiving on their turn-mill centers,” says Berger. “That gives them the ability to produce gearings, for example, and significantly expands their production capabilities.” These INDEX-specific features can easily be retrofit later, just like the ChipMaster chip-breaking software or CenterMaster software for aligning drilling holders.

Other common retrofit requests involve peripheral equipment—in all sizes. “Some customers have asked for integrated measuring devices inside the work area, or high-pressure pumps for cooling lubricant supply,” Berger reports. “We’ve also retrofitted complete cooling lubricant filtration systems, as well as extraction and fire extinguishing systems—particularly for customers switching from emulsion to oil-based machining.”

Retrofits for automation solutions are also frequently requested. These range from integrating individual components such as slides, conveyor belts, or shuttle systems to full raw

material feeding via bar loaders (MBL) or robot automation with iXcenter, and even fully customized automation setups.

**Tailored solutions call for creative thinking**  
The INDEX retrofit team distinguishes between standard solutions and custom designs. The custom projects often present the biggest challenge. “We’re constantly faced with new requests and ideas that have never been implemented before. But that’s exactly what makes our work so exciting,” says Maximilian Berger, speaking on behalf of his entire team.

Once a customer inquiry is received, the first step is to review the current configuration of the machine using the customer’s original order and part lists. Thanks to the INDEX database, Maximilian Berger and his colleagues can trace the machine’s full history, including any retrofitted components, software versions, and updates. “If needed, a service technician can carry out an on-site inspection, for example, as part of an INDEX Machine Check,” he explains.

If the feasibility check is positive, the team begins planning how to turn the customer’s



request into a reality. After a technical consultation, the customer receives a quote. “From there, we handle the entire project,” says Maximilian Berger. “We bring in our design engineers and specialists as needed. Then we ship the required materials to the customer, anywhere in the world. The local service technician implements the retrofit directly on the machine.” ✕

**The INDEX retrofit team**

- ▶ Oversees the project from initial inquiry through to implementation
- ▶ Provides technical consulting, prepares quotes, and handles order processing
- ▶ Plans and coordinates the retrofit project, which is carried out on-site by a service technician

▶ **service@index-group.com**  
▶ **Phone. +49 711 3191 - 600**



We take on every challenge and fulfill all customer requests, as long as they are technically feasible and economically viable.

**Maximilian Berger**  
is Head of Retrofit at INDEX



*Mr. Berger, let’s start with a question of terminology. What’s the difference between retrofitting, refitting, and retooling?*

A refit means a complete overhaul of the machine, carried out at our Refit Center. Retrofitting, by contrast, involves upgrading or adding individual components, typically on-site at the customer’s facility, carried out by a service technician. The goal is to enable the machine to do something it previously couldn’t. Retooling, on the other hand, which is usually handled by the customer themselves, is more about changing the process. The machine is already capable of that process; it just needs the right tools or tool holders installed.

*What are the most common retrofit requests you receive from customers?*

Our two biggest topics are software and automation. Many customers want additional software options, often paired with a hard drive upgrade. These are usually technology cycles that can be activated or implemented after the fact.

Second on the list are automation retrofits. This includes the integration of individual handling components into the machine, as well as installing a bar loader or adding robot automation via the INDEX iXcenter.

We’re also seeing growing interest in energy efficiency and sustainability measures. This ranges from the installation of frequency-controlled cooling lubricant pumps to centralized machine cooling systems, where the extracted heat is repurposed for the building’s climate control.

*Why should customers choose INDEX for the retrofits?*

No one else has our comprehensive OEM knowledge. Our team has deep technical expertise in the mechanical systems, software, electrical engineering, hydraulics, and fluid systems involved—even when the machine being retrofitted is no longer the newest model. For standard tasks, we can draw on a well-stocked inventory of spare parts, and for custom solutions, we have the full support of our in-house development team.

Since 2023, the INDEX MS24-6 and MS40-6 CNC multi-spindle turning machines have been driving expanded, high-precision, and efficient volume production at Coşkun Otomat.



## High volumes, lower costs

Coşkun Otomat A.Ş., located in Istanbul, is a successful machining service provider for the automotive sector. In 2023, the company invested in two CNC multi-spindle turning machines, the INDEX MS24-6 and MS40-6, to produce complex parts in volumes of several million units. Managing Director Yunus Coşkun is enthusiastic: “We never expected these machines would have such a dramatic impact on our production times and costs.”

The Istanbul-based company has specialized in shock absorber production for a wide range of applications since it was founded nearly 50 years ago. Just as long-standing is its partnership with INDEX, which began with cam-controlled single-spindle turning machines in the B series. Back then, the young company used the machines to produce shock absorber replacement parts for Turkish carmaker TOFAŞ.

Even today, the automotive industry dominates its order volume. Over almost five decades, Coşkun Otomat has amassed extensive expertise in precision component manufacturing. It now serves clients around the globe and supplies parts directly to their production lines. “Some of our largest clients include FESTO,

TENNECO Automotive, and ITT,” says Yunus Coşkun, Managing Director of Coşkun Otomat. “But we also supply companies in other sectors, including electronics, jewelry, model making, medical technology, mechanical engineering, and plant construction.” Coşkun Otomat is a service provider that offers more than just machining. “We maintain close relationships with our customers,” the Managing Director says. “We advise them during product development and suggest ways to improve quality and reduce costs during production.”

Multi-spindle turning machines from INDEX play a key role in this process. The INDEX brand enjoys high regard at Coşkun Otomat. for good reason. What makes the real difference are ➤



With the INDEX multi-spindle turning machines, we can now produce in just one month what used to take us more than five.

**Yunus Coşkun** is Managing Director of Coşkun Otomat, Istanbul

Indispensable for Coşkun Otomat's wide range of parts: The new INDEX multi-spindle turning machines deliver outstanding productivity and top quality.  
Photo: Coşkun Otomat





Skilled employees appreciate the wide range of technical features offered by the INDEX MS40-6 multi-spindle turning machine.



How fortunate that we invested in the cam-controlled INDEX MS25-6 multi-spindle turning machine back in 1998. On that machine, we were able to produce the part in just five seconds. That was a huge leap in productivity and far beyond what we expected.

**Yunus Coşkun** has been a loyal and enthusiastic customer for INDEX turning machines for many years

the many years of positive experience—especially when it comes to the outstanding quality of the machines, which Managing Director Yunus Coşkun came to know not just as a user. Back in 1985, he completed an internship at the Esslingen-based turning machine manufacturer: “I already knew INDEX was a technology leader in turning. Then I saw firsthand how development and production were done at INDEX. That sealed it for me.”

#### Cam-controlled multi-spindle turning machine cuts cycle time from 40 to 5 seconds

But back to Istanbul and the machining specialists at Coşkun Otomat, who faced steadily growing volume demands from the automotive industry in the 1990s. Yunus Coşkun remembers a large order from 1998. One key part was a shock absorber valve, initially produced on a multi-spindle turning machine from another manufacturer—at a cycle time of 40 seconds. “It was a good thing we also invested in the cam-controlled INDEX MS25-6 multi-spindle turning machine that year,” Coşkun says. “On that machine, we were able to produce the part in just five seconds. That was a very gratifying leap in productivity on a scale we had not expected.” The MS25-6 quickly paid for itself.

For Yunus Coşkun, cam- and CNC-controlled INDEX multi-spindle turning machines are sim-

ply irreplaceable when it comes to high-volume turning. He praises their unbeatable productivity and space efficiency. “And INDEX machines have exceptionally long service lives. That includes our cam-controlled MS25-6. It’s still the ideal machine for certain parts, even if it no longer achieves the precision of a mere few microns that today’s CNC multi-spindle turning machines offer.”

#### New CNC multi-spindle turning machines for demanding parts

Coşkun Otomat recently invested in two state-of-the-art INDEX multi-spindle turning machines: the MS24-6 and MS40-6. “We have enough orders to keep these machines running at capacity and the skilled personnel to operate them,” says Yunus Coşkun. One decisive factor was a contract for a highly complex part in which the customer had consolidated the functions of several previous components. Annual production volume: five million units.

The purchase was made through Tandem Takim Tezgahları, INDEX’s partner in Turkey. The small service company specializing in machine tools was founded in 2006 by engineers Ertan Güney and Tankut Koçak. The two managing directors see their company’s strength in its technical expertise, complemented by solid commercial knowledge. Tandem has been a

trusted partner of Coşkun Otomat for nearly 20 years. “Ertan Güney and Tankut Koçak have supported us with many INDEX acquisitions, from commissioning to day-to-day operations. No other machine builder offers this level of qualified on-site service.”

#### Skilled workers maximize machine potential

Yunus Coşkun and his team are thoroughly satisfied with their decision. The complex part is machined on the INDEX MS40-6 with tolerances in the single-digit micron range. “We determined surface quality through various measurements and inspected several features on the workpiece,” notes Coşkun. “The machine meets all of our specifications.”

He also points to the MS40-6’s technical highlights: six work spindles, twelve cross slides with NC axes in X, Z, and Y, and two synchronous spindles for back end machining. These not only ensure efficiency and precision, but also spark fresh ideas among the operators. By intelligently distributing the machining operations, they managed to reduce the cycle times, originally between three and five seconds, by 0.1 to 0.2 seconds. “That’s a time saving of about

five percent, which is pretty remarkable,” says the company head.

Among the future plans he will be implementing together with his skilled team is a finished parts warehouse. “Our customers expect us to keep certain quantities in stock. That’s where our INDEX multi-spindle turning machines truly shine. With these machines, we can now produce in just one month what used to take us more than five.”

Successful together (from left to right): Oktay and Yunus Coşkun of Coşkun Otomat emphasize how much they value their partnership with INDEX (represented by Tankut Koçak of INDEX’s partner Tandem and Rainer Gondek, Head of Marketing).

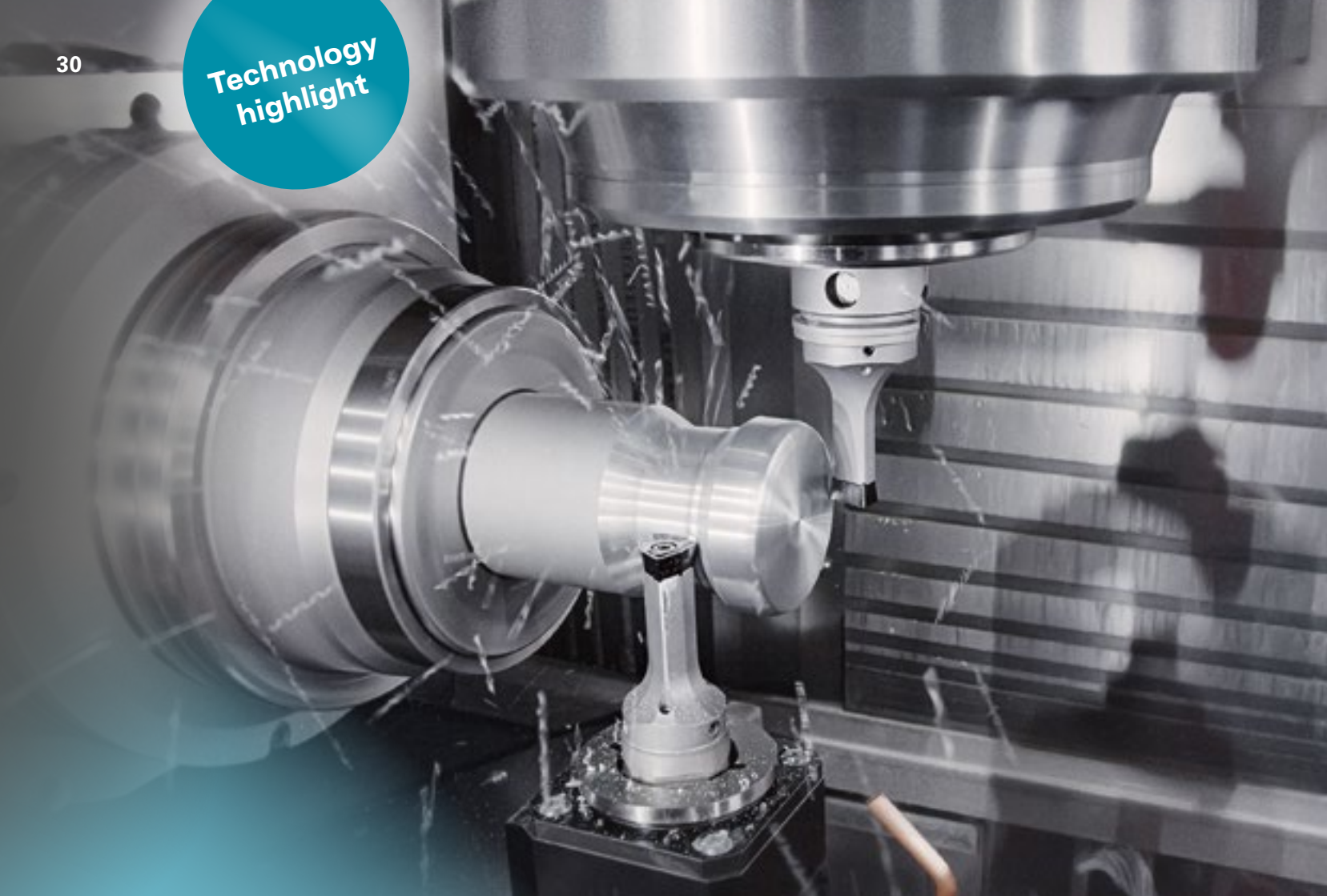
#### High-volume precision parts

Coşkun Otomat, based in Istanbul, is a well-established machining service provider for the automotive industry. Its customers include major companies in the USA, China, and several European countries. To better serve the European market, Coşkun Otomat founded its Belgian subsidiary, Coşkun BBVA, in 2002. Today, the company employs 120 people, including 20 engineers. In 2023, Coşkun Otomat generated 10.6 million euros in revenue.

COŞKUN OTOMAT A.Ş., Bakırköy – İstanbul / Türkiye  
[www.coskunotomat.com.tr](http://www.coskunotomat.com.tr)



Photo: Coşkun Otomat



## Setting new standards in turning with High Dynamic Turning 2.0

With High Dynamic Turning 2.0, we're introducing a cutting-edge turning technology that can now be successfully implemented on a range of INDEX turning centers. Following its initial use on machines equipped with milling spindles, we've expanded the application range with our newly developed gear-driven tool holder, which enables the use of HDT tools in the turret. On turn-mill centers, this makes it possible to run two HDT tools simultaneously. HDT can also be integrated into INDEX multi-spindle turning machines, delivering a significant boost in efficiency.

### Variable tool angle as the technological key

At the heart of the High Dynamic Turning (HDT) process is a variable turning tool approach angle, which is dynamically controlled via the machine's control system. This enables flexible, continuous machining of complex contours—without changing tools. The orientation is controlled by the rotary axis of the milling spindle, while the feed motion is managed via the Y axis. This allows both face and outer diameter machining to be performed using a single tool—always in the optimal cutting

position. The benefits are clear: shorter machining times, improved chip control, and longer tool life.

Ceratizit played a key role in establishing HDT with the launch of its FreeTurn system in 2019. The indexable inserts mounted on the face side have multiple cutting edges, each with a unique geometry designed for different tasks. By simply rotating the tool, the next cutting edge is brought into position—without touching the tool magazine. The result: reduced tool change times and fewer tool stations required.

With the newly developed HDT holder from INDEX for tool turrets, workpieces can be machined simultaneously with two tools.



The combination tool with PSC interface unites multiple machining functions in a single tool station. On multi-spindle turning machines, that translates to fewer tools, fewer occupied slides—and a clear productivity advantage.

In practice, users have reported up to 25 percent time savings compared to conventional machining methods.

### HDT in the tool turret and on multi-spindle turning machines

A major technological breakthrough is our newly developed tool holder for turret machines, which makes HDT possible on this type of platform for the first time. A zero-backlash transmission with a 100:1 reduction ratio enables the highly precise positioning of the cutting edge. This solution can be integrated into virtually any turret-equipped machine. On INDEX or TRAUB turn-mill centers, this means two HDT tools—one in the milling spindle, one in the turret—can now work simultaneously on the same workpiece, offering maximum machining flexibility and productivity.

HDT also opens up new potential on multi-spindle turning machines. The angular adjustment typically performed via a Y axis is handled here through interpolation of a swivel axis combined with the workpiece's C axis. Tool rotation is performed by a compact direct-drive spindle, originally developed for milling and gear cutting applications. Its low-profile installation on the slide ensures rigid tool guidance and optimal stability. Together with tooling partner Schwanog,

we have also developed a modular combination tool with a PSC interface, uniting multiple machining functions in a single station: an HDT insert, a form tool insert, and a grooving insert. This enables the efficient machining of complex geometries—such as a combined radius relief with a shoulder—using just one tool. On multi-spindle turning machines, that translates to fewer tools, fewer occupied slides, and a clear productivity advantage.

### Future-proof concepts for greater flexibility

New perspectives in turning are emerging with our concept of a “mini-turret” equipped with multiple HDT-capable cutting edges, a solution that can be integrated into production turning machines such as the INDEX C100 or C200. At the same time, we're developing the supporting software solutions: Special input screens are already available for TRAUB machines, while macros for axis transformation are in place for INDEX machines. A user-friendly programming interface for HDT applications is also currently in development.

With High Dynamic Turning, we are unlocking new potential in turning technology—delivering greater efficiency, increased machining flexibility, and maximum utilization of machine capabilities. ✕



### High Dynamic Turning 2.0 Highlights

- **Significant time savings:** Up to 50 percent shorter cycle times thanks to the simultaneous use of two HDT tools
- **Reduced tool requirements:** One cutting edge for multiple operations—fewer tool changes
- **Increased process reliability:** Improved chip formation, consistent cutting conditions, and longer tool life
- **Maximum flexibility:** Face, outer diameter, and profile machining with a single tool
- **Easy integration:** HDT can be implemented on existing INDEX and TRAUB machines, with full software support for fast deployment
- **Stability:** Axial force application into the tool means compressive instead of bending loads



Watch the film now:

► [www.index-group.com/hdt-technology](http://www.index-group.com/hdt-technology)

The components for the magnetic housings of the spring-applied brake COMBISTOP 38 (see image on the right) are manufactured in a single complete machining process on the INDEX G320 turn-mill center. This brake is primarily used in intralogistics applications—such as on conveyor belts, chain lifts, or the drive gears of autonomous transport systems.



We manufacture a wide range of spring-applied, permanent magnet, and electromagnetic brakes with torque ratings from 0.1 Nm to 3,000 Nm. Due to the high variety of product versions, we rely on a modern machine fleet that allows us to operate with great flexibility and achieve short throughput times.

**Burkhard Pape** is  
Plant Manager at KEB

## Reliable by design— components for maximum safety

KEB is known, among other things, for high-quality brakes and clutches used in automation systems. Manufacturing the housings for these safety-critical components in small to medium batch sizes while keeping production economical is a challenge. KEB's experienced machining team meets this challenge with the help of the latest INDEX G220 and G320 turn-mill centers.

Brakes and clutches—with these products and just six employees, Karl E. Brinkmann founded his namesake company in 1972. Today's KEB Automation KG has grown into a globally active, full-range provider of industrial automation solutions with around 1,500 employees worldwide. Its product portfolio spans the emerging field of Industrial IoT, HMIs, and machine controllers to complete drive and automation systems with frequency inverters and motors. Brakes and clutches remain a core part of the business, ensuring safe holding, starting, stopping, and positioning in a wide variety of drive and automation applications.

Burkhard Pape, Plant Manager for KEB's brake and clutch production, describes the product range: "We manufacture a wide variety of spring-applied, permanent magnet, and electromagnetic brake series, with torque ratings from 0.1 Nm to 3,000 Nm." A key feature of KEB brakes and clutches: They are customized to individual specifications. That creates high demands on the manufacturing process, as Pape points out: "Due to the high variety of product versions, we rely on a modern machine fleet that allows us to operate with great flexibility and achieve short throughput times."

### A partnership with INDEX spanning nearly 25 years

KEB's turning journey with INDEX began in 2001, with the purchase of their first machine—and since then, another 20 machines have followed, including vertical turning machines, multiple INDEX G250 turn-mill centers, an R200, and most recently, one each of the latest G220 and G320 models. "We currently have 14 INDEX machines in operation," says Uwe Rauchschalbe, Head of Machining. A trained machinist and certified industrial foreman, Rauchschalbe has been with KEB since 1982 and knows every INDEX turning machine used in the plant inside and out. He praises them across the board as premium machines: "INDEX machines have a very robust mechanical and thermal design, which translates into high precision, dynamic performance, and long tool life."

He also highlights the ease of setup as a key factor for achieving the flexibility needed in cost-efficient production: "We machine brake housings with customer-specific connection dimensions. That means we deal with a high number of variants and relatively small batch sizes, which means frequent changeovers." In this context, the excellent accessibility of the



The INDEX G220 turn-mill center is ideally suited for the complete machining of brake housings. Convinced of its capabilities are (from right to left): KEB Plant Manager Burkhard Pape, INDEX Head of Sales Lars Herrmann, KEB Head of Machining Uwe Rauchschalbe, and INDEX Regional Sales Manager Carsten Zander.



Left: A look down the INDEX aisle at KEB in Barntrup, where 14 INDEX turn-mill centers and vertical turning machines operate nearly around the clock. In continuous use since 2022: the INDEX G220 turn-mill center with iXcenter automation (photo below).

Right: The latest addition to the KEB fleet is the INDEX G320 turn-mill center, featuring two turrets and a high-performance milling spindle that can be used on both the main and counter spindle. Automated operation is handled by a conveyor belt working in tandem with the integrated INDEX WHU workpiece handling unit.

INDEX machines proves valuable, along with practical details like the INDEX tool holders with W-serration. "They allow us to mount the tool on the machine straight after presetting, with accuracy down to just a few microns," Rauchschalbe adds.

#### Experience with the new generation of INDEX turn-mill centers

One reason KEB consistently chooses INDEX machines is the outstanding ratio of performance to footprint. This is a key advantage also seen in the INDEX G220 turn-mill center with iXcenter automation, which has been in operation at KEB since 2021. At the time, INDEX invited its long-standing partner to become a pilot user for the newly developed turn-mill center. For Head of Machining Uwe Rauchschalbe, this was a welcome opportunity to put the entire machine concept through its paces: a motor milling spindle with Y and B axes, two turrets, and an integrated robot cell.

The G220 was tasked with machining housings for permanent magnet and spring-applied brakes, safety-critical components with stringent requirements. The parts include function-critical features that must be reproduced with extremely high accuracy. This includes tight positional and geometric tolerances, H7 and H6 fits, and specif-

ic surfaces that must meet  $R_z = 6.3 \mu\text{m}$  roughness standards. "One major challenge is parallel machining on both spindles. If we're roughing on one side, it can't affect the precision on the other," says Rauchschalbe. "But for the INDEX G220, that's no problem at all."

#### Automation is gaining importance

At KEB, every new machine investment includes an automation solution. Some existing machines, such as the INDEX vertical turning machines, are already equipped with automated workpiece handling systems for loading and unloading. Others are gradually being upgraded with automation step by step. "It was important to us that the INDEX G220 turn-mill center came equipped with the iXcenter automation cell." After a few minor adjustments, the system now runs exactly as intended, confirms Claus Düstersiek, a mechanical engineer specializing in CNC programming: "Thanks to the INDEX interface and the visual programming environment on the control panel, the robot is very intuitive to program and operate." His conclusion: "We're extremely satisfied with the automated INDEX G220."

#### INDEX G320 for larger housings

After completing the test phase, KEB added the turn-mill center to its permanent machine

fleet in 2022, and followed up the next year by acquiring the next size up: the INDEX G320. "Our spring-applied brakes are becoming increasingly powerful and larger," explains Plant Manager Burkhard Pape, "primarily due to key application areas like wind energy, robotics, medical technology, e-mobility, elevator systems, and crane technology." As a result, the magnetic housings are also increasing in size. "Until recently, we machined blanks with a diameter of up to 360 mm," says Uwe Rauchschalbe. "Now we're already at 400 mm. So it was time to find a successor to the proven INDEX G250. The INDEX G320 turn-mill center is larger, more dynamic, and more powerful, making it the perfect fit."

The production requirements for the G320 are largely the same as those for the G220, including batch sizes. As with the smaller turn-mill center, the parts come fully finished out of the machine. In this case, however, they are not removed by a robot, but rather via a conveyor belt, working in tandem with an integrated workpiece handling unit (WHU) for automation. The machining team is just as impressed with the G320 as with the G220. They praise their collaboration with the INDEX team as a true partnership, highlighting the responsive support and collaborative spirit whenever machine improvements were needed.



#### Virtual Machine supports optimized and safe machining

Programmer Claus Düstersiek has another word of praise, this time for INDEX's programming and simulation software, the "Virtual Machine (VM)", available for all INDEX machines. "We use it primarily on our turn-mill centers, which handle highly complex machining tasks." The VM works with a digital twin of the machine and provides a 1:1 representation of the CNC. This allows users to detect and correct NC program errors before the code is transferred to the physical machine, which significantly reduces setup times. "We also use the Virtual Machine to calculate cycle times, optimize part programs, and gain valuable time savings in production," adds his colleague Alfred Rospleszcz.

CNC programmer Claus Düstersiek at the INDEX G320: "The setup and operation of this machine are ergonomically very well designed."



Foto: KEB Automation KG

#### Full-service provider for industrial automation

Founded in 1972 as Karl E. Brinkmann GmbH, the company became KEB Automation KG in 2017. The addition of "Automation" reflects its evolution into a system supplier for mechanical and plant engineering. Now led by the second generation of the founding family, KEB is an established partner for automation solutions—ranging from brakes to drive and control technology, all the way to Industrial IoT. The KEB Group employs around 1,500 people across nine subsidiaries and operates globally with more than 50 partners.

KEB Automation KG, D-32683 Barntrup  
[www.keb-automation.com](http://www.keb-automation.com)

More customer success stories online:  
[www.index-group.com/success](http://www.index-group.com/success)



## INDEX inside



### New production and assembly capacity at INDEX Malacky site

In April 2025, the new hall complex at the production and assembly site in Malacky, Slovakia was officially opened. The two-story hall, measuring 77 m x 30 m, expands the logistics and assembly space to 8,300 m<sup>2</sup>. In the future, this facility will manufacture assemblies for all INDEX single-spindle series—including control cabinets, energy frames, and tool carriers.

The climate-controlled space is outfitted with state-of-the-art technology, including heat recovery systems, heat pumps, and a planned solar installation. In addition to INDEX products, the Malacky site also produces the 3D metal printing machines developed by subsidiary One Click Metal.



### New iXperience Center opens in Deizisau

**8,926 m<sup>2</sup>**  
total area

**10**  
training rooms

**5**  
conference rooms

**140**  
employees in service, technology, and support

Extensive machine fleet

On-site cafeteria

The new iXperience Center in Deizisau has officially opened its doors. Customer service, the INDEX Academy, and technology development are now housed under one roof, along with departments such as retrofitting and spare parts sales, all centrally located.

Around 15 current machine models and modern, fully equipped training rooms are available for instruction. Here, employees and customers receive hands-on training in programming, operation, and maintenance.

The iXperience Center strengthens service capabilities and promotes knowledge transfer related to INDEX and TRAUB machines.

# OPEN HOUSE



### INDEX Open House and Hydraulic Day

The 2025 INDEX Open House took place at the iXperience Center in Deizisau from March 24-28 and drew an outstanding response with over 2,000 professional visitors. Roughly 33 percent of the guests traveled from abroad, representing 26 different countries, which emphasizes the event's international significance. Visitors gained hands-on insights into cutting-edge manufacturing technologies, demonstrated live and in action. The event was supported by twenty co-exhibitors presenting their solutions across all stages of the production process.

A particular feature was the dedicated Hydraulic Day, where 75 participants took part in expert talks and live demonstrations showcasing INDEX's concentrated expertise in hydraulic component machining. Key highlights included innovative automation solutions and High Dynamic Turning (HDT), a forward-looking approach that delivers greater flexibility and efficiency in machining. Premium catering and vibrant technical exchanges in a relaxed setting rounded out the event.

Once again, the Open House proved the ideal platform for innovation, dialog, and genuine partnership. We're already looking forward to the next edition, at the iXperience Center in Deizisau, March 17-20, 2026.

#### ► Save the date!

**INDEX Open House, March 17-20, 2026**



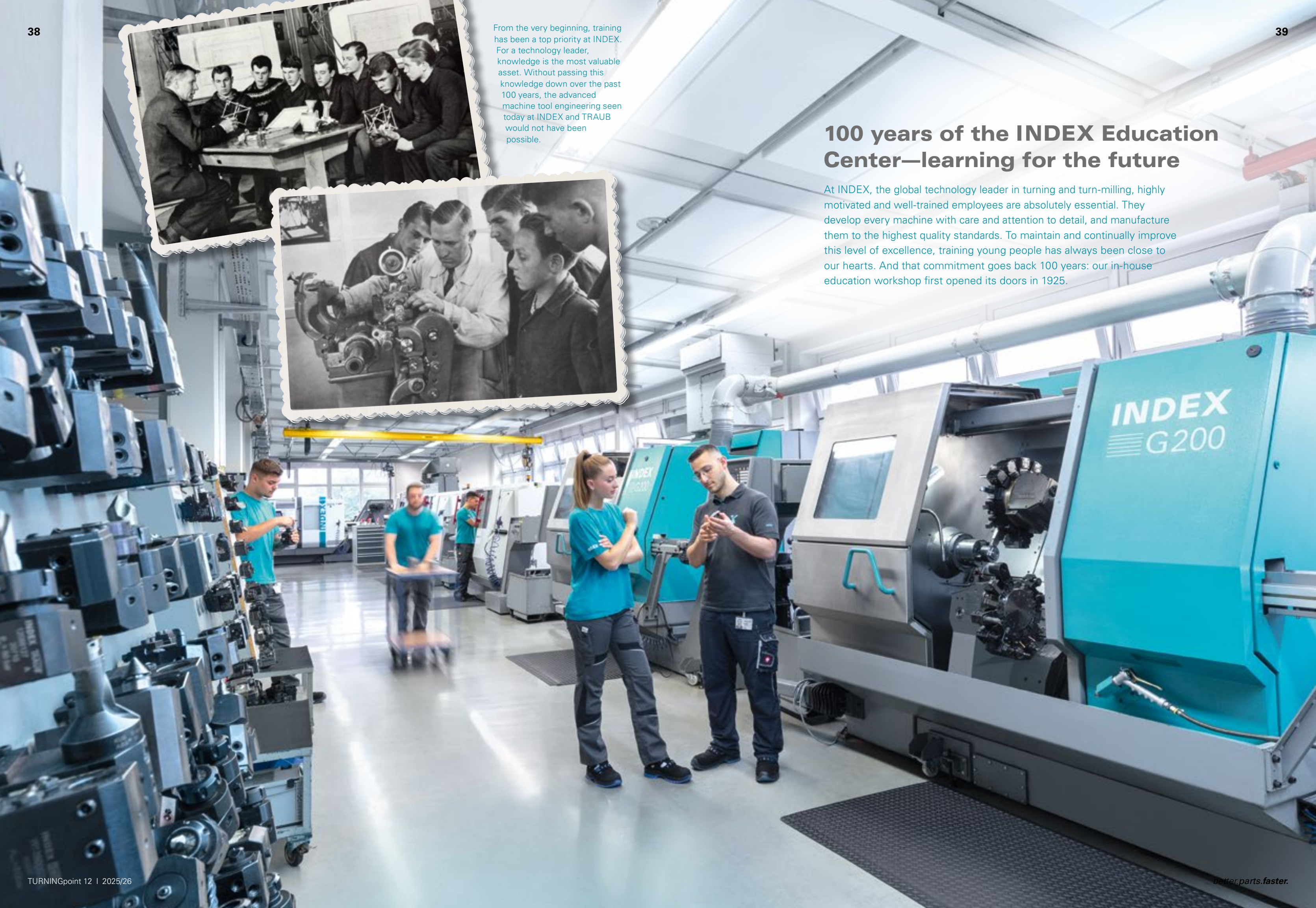


From the very beginning, training has been a top priority at INDEX. For a technology leader, knowledge is the most valuable asset. Without passing this knowledge down over the past 100 years, the advanced machine tool engineering seen today at INDEX and TRAUB would not have been possible.



## 100 years of the INDEX Education Center—learning for the future

At INDEX, the global technology leader in turning and turn-milling, highly motivated and well-trained employees are absolutely essential. They develop every machine with care and attention to detail, and manufacture them to the highest quality standards. To maintain and continually improve this level of excellence, training young people has always been close to our hearts. And that commitment goes back 100 years: our in-house education workshop first opened its doors in 1925.



## Create your future training and study at INDEX

A solid education is essential—both for young people securing the best chances at a qualified job, and for companies like INDEX, which offers a range of technical, industrial, and commercial apprenticeships.

The focus is on technical training, in line with the company's products. Among the most important professions are metal cutting machine operators—referred to with appreciation at INDEX as "Precision iXperts." Training Manager Simone Kuhn highlights another key career path: "Industrial mechanics can obtain an additional qualification during their training with us to become an 'electrically skilled person for defined activities.' And if they're interested, they can go on to earn a second qualification as an industrial electrician. That makes them highly sought-after specialists, whether as setup technicians or in service roles."

With automation and digitalization advancing rapidly in the machine tool industry, INDEX is well prepared. Professions such as electronics technician for automation technology, or IT specialist for application development or digital networking, offer promising futures and are available at the Esslingen site. Technical product designers, who turn creative ideas into functional CAD designs, also continue to be in high demand.

Choosing the right profession is one thing, but a modern, engaging training environment is just as crucial. That's where INDEX's dedicated team of ten training professionals, a mix of mechanical engineering technicians and master tradespeople, comes in. "Our workstations are located right in the middle of the training center, among the apprentices," says Ann-Katrin Tangermann, trainer in metal technology "We don't deliver front-of-class lectures from some office; we believe in working and learning together, on the same level." 

The INDEX training center at the Esslingen site is longer than a soccer pitch! Between modern machines and workbenches, there are measuring and testing stations as well as learning islands equipped with PCs. This is not only done on learning workpieces, but also on real INDEX products, such as control units or production parts that will later be sold.



The technical professions in which we provide training are equally attractive to men and women. Especially as we can work with state-of-the-art machines, tools and automation equipment in a future-oriented way. Our training team has a balanced age structure. We provide support not only with specialist knowledge, but also with great empathy. We don't neglect fun either. Because we are convinced that those who enjoy their work can also achieve the best possible results.

**Giuseppe Collerone** is a trainer in CNC turning/programming



INDEX supports us in a variety of ways, not just in our respective apprenticeships. We are involved in cross-professional projects from day one, such as numerous school projects for career guidance. INDEX also enables us to take part in many excursions and training courses. We trainees also have our own Instagram channel where you can follow us and our training. This is where we post what moves us.

**Stefan Ritter** is training to become an electronics technician for automation technology



The technical training itself has changed a lot over the years. What's important to you today?

Real-world relevance. At our training center, we work with the latest equipment, from machines to control systems and IT infrastructure. We've developed a digital learning platform that we customize ourselves, so we can train apprentices directly on our own products.

We want them to understand company processes early on. We consistently teach a process-oriented mindset, based on the four phases: Inform, Plan, Execute, Check. Using real production tasks, we build both technical skills and methodological competence. These skills are then deepened in the specialist departments, where apprentices spend three full months fully integrated into day-to-day operations. There's also strong interest in the opportunity to gain international experience.



[www.index-group.com/ausbildung](http://www.index-group.com/ausbildung)



Instagram: @index\_azubis

## Today

With its INDEX and TRAUB brands, the INDEX Group is one of the world's leading manufacturers of CNC turning machines. The company employs more than 2,000 people worldwide, including around 130 trainees and students.

- Training is offered in a total of seven technical, industrial, and commercial professions, as well as in dual study programs.
- Each year, INDEX welcomes approximately 40 new trainees and 5 dual students.
- Training period: 2.5 to 3.5 years
- Monthly pay in the first year of training is around 1,300 euros, based on a 35-hour week.
- Dual training program combining vocational school classes with hands-on learning in the company's own training center and specialist departments
- Professional development opportunities, international internships, and study abroad programs
- Provision of laptops, workwear, and protective equipment
- Attractive additional benefits such as Wellpass (access pass for fitness and wellness studios), among others

## 100 years ago

When Hermann Hahn founded the machine tool factory "INDEX, Hahn & Kolb" in 1914, he already understood that well-trained employees were the foundation of a thriving company. He started out with 18 workers, 4 clerks, and already two apprentices. By 1925, the company had its own modernly equipped training center, then still called a Lehrwerkstatt (training workshop).

- There were three recognized trades.
- Up to seven apprentices per year
- Training period: 2 to 3 years
- Wages amounted to 5.80 Reichsmarks per week, for 48 to 60 hours of work.
- The focus was on machine-oriented, hands-on training.
- Working conditions were tough with lots of dust and oil mist, and no protective workwear.



CREATE  
YOUR  
FUTURE

Our slogan CREATE YOUR FUTURE means that everyone is responsible for shaping their own future. Make the most of it—we're here to support you. And the heart? It stands for the passion we all bring to the table: trainers, trainees, and students alike. It's about commitment to performance and learning, about fun and challenge, and most importantly, about mutual respect.

**Simone Kuhn** completed her apprenticeship at INDEX as a technical draughtswoman and then as a mechanical engineering technician and is now Head of Education.



Ms. Kuhn, what makes training at INDEX stand out from other training providers?

In addition to the professional content we teach based on our deep expertise, we place great emphasis on mutual respect. Right at the start of training, we send our 40 new starters to a youth retreat for a four-day orientation week. During this time, we focus on teamwork and communication, cook together, and convey values in a playful, engaging way—things like punctuality, manners, dress code, and social skills—all the things that will be important later in their professional lives. We want our apprentices to feel welcomed at INDEX, to get to know each other and our expectations before stepping into their actual training roles.

And throughout the program, we continue to emphasize shared experience. This includes excursions to our company locations and customer visits. In all these activities, we combine technical learning with team-building activities.

Discover innovations that drive your success

- ▶ Live machine demonstrations
- ▶ Comprehensive service program
- ▶ Expert advice on every aspect of the machining process chain
- ▶ Meet the experts



September 22–26, 2025  
Hannover Messe



March 17–20, 2026  
Deizisau, iXperience Center



Exhibition and event highlights 2026

SIMODEC, La-Roche-Sur-Foron, France ▶ March 02–06, 2026  
TECHNISHOW, Utrecht, Netherlands ▶ March 10–13, 2026



INDEX Open House, Deizisau, Germany

▶ March 17–20, 2026

Global Industrie, Paris, France ▶ March 30 – April 2, 2026  
CCMT, Shanghai, China ▶ April 21–25, 2026  
SIAMS, Moutier, Switzerland ▶ April 21–24, 2026  
Intertool, Wels, Austria ▶ April 21–24, 2026  
IMTS, Chicago, USA ▶ September 14–19, 2026  
AMB, Stuttgart, Germany ▶ September 15–19, 2026  
Maktek, Istanbul, Türkiye ▶ September 29 – October 03, 2026  
JIMTOF, Tokyo, Japan ▶ October 26–31, 2026

NEW @ INDEX

We're pleased to welcome new Managing Directors at several of our subsidiaries. We thank the outgoing leaders for their dedicated service and wish the new appointees and their teams continued success.



INDEX USA:  
Michael Huggett



INDEX India:  
Wilson Thomas



INDEX France:  
Nicolas M. Guillet



INDEX Switzerland:  
Daniel Stier

Legal notice

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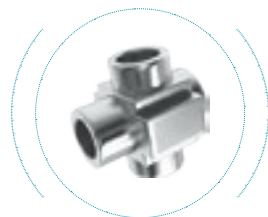
**Create parts  
that make  
our world  
a better place!**



## **Best performance for large tasks**

Manufacturing components for applications like energy systems demands high-precision machining technologies. Discover more about the innovative INDEX turning centers and processes that empower you to produce parts with exceptional accuracy and efficiency.

**Find out more:** [www.index-group.com/energy-solutions](http://www.index-group.com/energy-solutions)



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