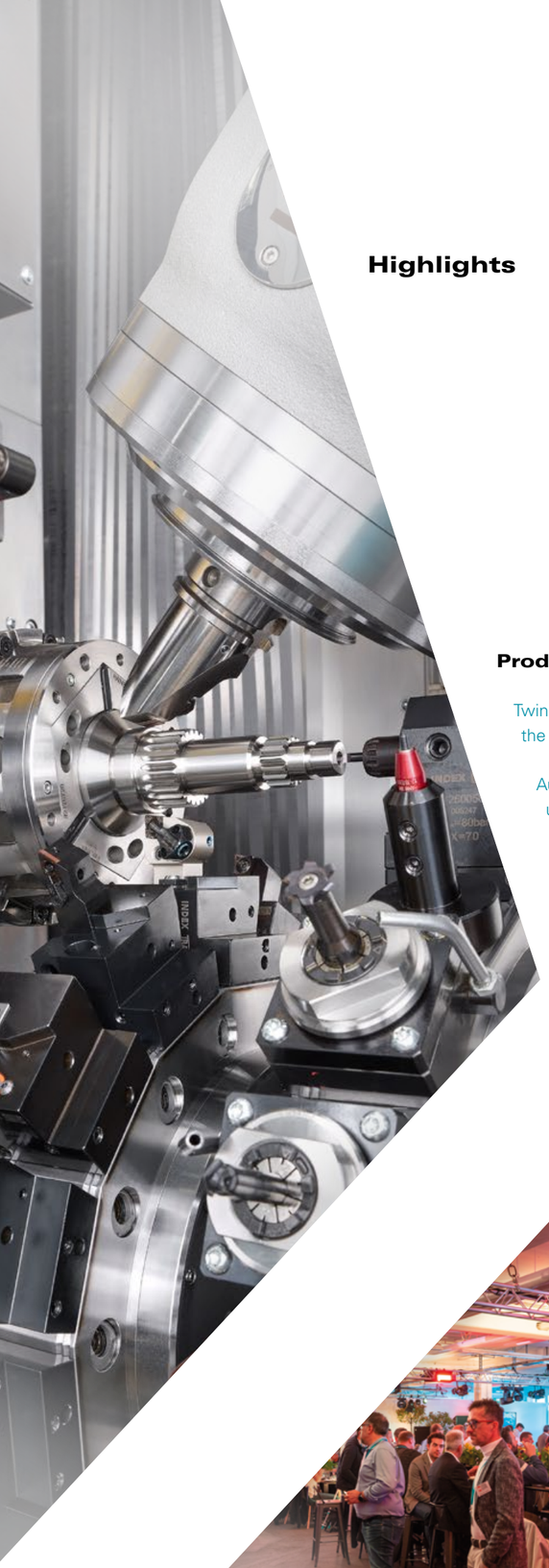
The customer magazine of the INDEX Group
Issue 9 2022/23

INDEX

TURNINGpoint

*better.parts.**faster.***



Highlights

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

Recognizing and seizing opportunities when they knock

Dear customers and friends of the company,

Rarely has the geopolitical environment and the economic outlook been as uncertain as it is today. Currently, the spectrum of potential risks for a prosperous economy range from a new wave of restrictions due to the coronavirus all the way to the humanitarian and economic repercussions of the war in Ukraine.

Nevertheless, despite all these unquestionably negative factors, there are also many positive developments that open up new perspectives for the machining industry.

In addition to components for the broad field of e-mobility, there are opportunities for growth in the areas of renewable energy, aviation, medical technology, defense, and semiconductor technology. It will be a matter of being quick to react and ready to deliver while contracts for components are still in the process of being awarded.

The key to winning the bid, both for businesses that are already established in their fields and for new entrants, will be to use extremely productive, yet highly flexible manufacturing concepts.

This is precisely the requirement that our many new developments—which we will be presenting at AMB 2022 in Stuttgart and at IMTS 2022 in Chicago—are aiming to meet.

The new INDEX G220 and the equally new TRAUB TNX220 will be introduced for the first time as the smallest and youngest members of our family of turn-mill centers. With a bar clearance of 76 mm, a motorized milling spindle, and two tool turrets, this series will take on a unique position across the globe when it comes to productivity.

If you choose to add the optional INDEX iXcenter robot cell and the INDEX Closed Loop functionality for in-process measurement of quality characteristics, including automatic adjustment of tool corrections, you will have all that you need to autonomously produce high quality.

In addition to automation, Industry 4.0 applications are becoming increasingly important to guarantee continuous operation of the systems and thus a high OEE. We've developed a few new apps with this in mind and we'd like to introduce these as well.

As always, we will round off our appearances at the trade fairs with extremely interesting equipment featuring the highest level of integrated technology for complete machining.

Don't miss out!
We look forward to seeing you.

Twins for high-performance turn-mill machinery

Do you machine complex parts with a turning length of up to 900 mm? Our new INDEX G220 and TRAUB TNX220 turn-mill centers are able to achieve this in a single operation. Equipped with identical main and counter spindles, a powerful motorized milling spindle with Y/B quill kinematics and two lower tool turrets, these two turn-mill centers are setting new standards in complete machining as well as in terms of productivity and flexibility.

INDEX G220 and TRAUB TNX220 turn-mill centers

For many metalworkers, complete machining is the process of choice to economically accommodate a greater variation of parts, greater productivity per unit area, and increased quality requirements. The increase in demand for turn-mill centers was a decisive reason for us to upgrade our product portfolio to the latest standards with a new design. As an example, we present you the smallest and latest version of our powerful G-series—the INDEX G220—along with the TRAUB TNX220 turn-mill center, which is identical in design down to the control and drive technology.

Why make two nearly identical machines?

Because we want to fulfill our customers' wishes. Just like the predecessor of the INDEX G220, with its Siemens control and drive package, has a large user base, the existing TRAUB TNX65 turn-mill center with milling spindle and Mitsubishi control has many fans. We're accommodating both user groups when it comes to operation and programming so that they can continue to use their existing NC programs without having to make major changes.

Particularly, users of the TRAUB TNX65 with milling spindle can look forward to a considerable performance boost that comes with its successor, the TNX220—starting with the technical data: The range of machining capabilities is considerably extended with a greater spindle clearance of 76 mm, a 230 mm chuck diameter, a significantly greater turning length of 900 mm, a motorized milling spindle, plus additional milling and turning tools. This also applies to the same extent to the INDEX G220.

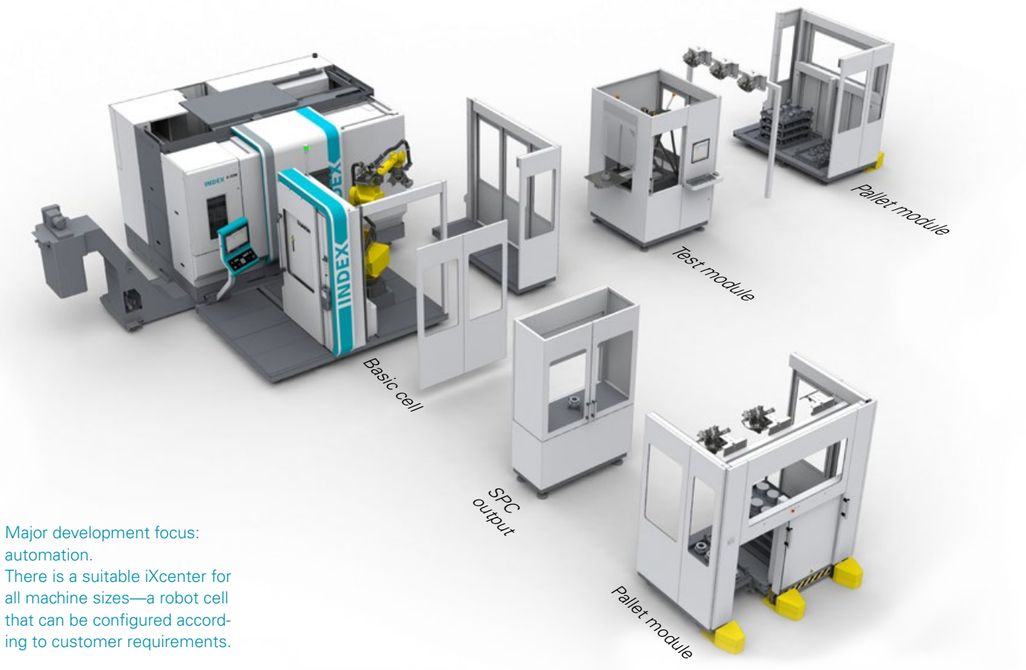
The two new turn-mill centers both benefit from an entirely new machine concept designed from the ground up. Based on a rigid and vibration-damping mineral-cast monoblock machine bed and large-dimension linear guides in X and Z axes, both machines provide excellent stability and damping properties, as well as outstanding dynamic values. The two identical working ›

Our new turn-mill centers excel at letting you carry out complete machining on complex parts, for example in the areas of e-mobility, aviation, and medical technology.

Jan Hroch is Head of Technical Sales for single-spindle machines at INDEX

The INDEX G220 and TRAUB TNX220 offer the best performance for powerful turning and milling operations on small to medium-sized complex components from the automotive and aviation industries, as well as in the areas of medical technology and general mechanical engineering.

The new INDEX G220 and TRAUB TNX220 turn-mill centers are equipped with two tool turrets and a powerful motorized milling spindle. They are thus ideally prepared for complete machining and offer the possibility to use multiple technologies.



Major development focus: automation.
There is a suitable iXcenter for all machine sizes—a robot cell that can be configured according to customer requirements.

spindles (main and counter spindles) are fluid-cooled, allow for a maximum speed of 6,000 rpm, and have a spindle clearance of 76 mm. With 40 kW of power and a torque of 207 Nm (at 40% DC), they are powerful and highly dynamic.

A key element is the Z axis slide with the motorized milling spindle and the hydrodynamically mounted Y/B axis arranged above the axis of rotation. The powerful spindle drive is available with speeds up to 12,000 rpm (HSK-T63) and 18,000 rpm (HSK-T40) and facilitates a wide range of drilling and milling operations, up to as much as five-axis machining. The milling spindle operates with a tool magazine with space for up to 139 tools (HSK-T63 or HSK-T40).

Two additional tool turrets arranged at the bottom are also available for efficient machining performance. These are not only able to move in the X and Z, but also in the Y direction. They are available in two versions: with VDI30 mountings and 12 stations or with VDI25 mountings and 15 stations. They can be continuously equipped with driven tools.

Automation options

When it comes to automation, the INDEX MBL76 bar loading magazine is particularly noteworthy. Tailored to match the new turning spindle diameter, it stands out owing to its excellent damping properties. It is entirely electrically powered, which means it is completely free of ›

Another new addition to the INDEX portfolio: the MBL76 bar loader for bar diameters of up to 76 mm and matching the new machine design.

We started the complete redesign of the INDEX G-series turn-mill centers in 2018.
The successful INDEX G420 was first in line. Today, we offer turn-mill centers with turning lengths of 900 to 2,300 mm for a bar clearance of 76 to 120 mm and a chuck diameter of 200 to 500 mm.

hydraulics. Its ergonomic and easy-to-set-up structure and, of course, its guiding properties are ready to impress one and all. Last but not least, it achieves even faster change times than its predecessor, the INDEX MBL65.

An integrated gantry-type loader with a double gripper and/or the iXcenter automation solution—now available in size L—can be used to deal with flange or shaft-style parts. Similar to the XL version, it essentially consists of a base unit placed in front of the machine on which a jointed-arm robot with a load capacity of up to 70 kg is installed. Various modules can be freely docked to this robot cell from two sides: pallet/rack systems, measuring/testing stations, equipment for deburring, cleaning or laser marking, and much more. The robot can thus not only be used for loading and unloading, but also for downstream processes.

Variant with third indexing turret instead of the milling spindle

Both the INDEX G220 and the TRAUB TNX220 turn-mill centers, which are equipped with a motorized milling spindle, will also be available in a 200 version. Similarly to the other sizes in the G-series, the difference is that an additional indexing turret with Y axis is integrated in this model instead of the milling spindle. X

Machine highlights

INDEX G220
TRAUB TNX220

- Smart working area concept and variable machining options for turning lengths up to 900 mm
- Identical main and counter spindles with 76 mm spindle clearance, 207 Nm torque (40% DC) at 6,000 rpm
- Max. chuck diameter 230 mm
- Powerful motorized milling spindle with proven Y/B quill kinematics for complex 5-axis milling operations
- Two lower tool carriers, each with 12 stations VDI30 or 15 stations VDI25
- High thermal and mechanical stability
- Wide range of automation options

Find out more:
› **index-traub.com/g220**
› **index-traub.com/tnx220**

Successful technology integration

EWS Weigele, a renowned manufacturer of static and driven tool systems, manufactures the bevel and spur gears it needs in-house—on a five-axis INDEX G220 turn-mill center. That way, EWS gets the gear assemblies faster than it would from an external supplier, is more flexible in their development, and reduces costs over the long term.

EWS Weigele GmbH & Co. KG in Uhingen (southern Germany) specializes in tool mountings for lathes and turn-mill centers. Due to the varying interfaces from one country to the next and from one manufacturer to another, the product portfolio has grown to some 30,000 solutions over the years. Managing Partner Frank Weigele explains: "We aim to develop and produce suitable static and driven tool systems for nearly all CNC lathes and turn-mill centers. Our offering ranges from products based on defined standards all the way to innovative customized solutions that we also offer in small volumes."

In addition to the desired variety of products, Frank Weigele mentions the high level of vertical integration as a further corporate principle. EWS masters nearly all machining technologies, even including case hardening, and can therefore manufacture nearly all the required parts by itself. That's quite impressive, considering this amounts to about 65,000 active parts.

After visiting the INDEX factory in Esslingen in 2017, EWS management decided to take gear manufacturing in-house. This is namely where they discovered that INDEX produces spiral bevel gears on its own INDEX turn-mill centers. It was an option that, to the EWS machining pros, seemed a worthwhile way of steering clear from supplier dependency for these types of gear components. "The bevel gear production was impressive. At the time, we already had two INDEX G220 turn-mill centers we used mainly to produce spindles and other accessory parts for driven tools. This included thousands of bevel gear blanks that we subsequently sent out for gear cutting. It therefore made sense to enable such a machine to cut our gears." ›

Technician Norbert Stanzel checks the quality of the bevel gears. This includes visual inspections right next to the machine.

Left: The bevel gears that have just been machined are tested on a gear rolling tester machine alongside the INDEX G220.
(Photos: EWS)

At EWS Weigele, in addition to Managing Partner Frank Weigele (2nd from right), it is mainly Design Engineer Roland Sigel (left) and machining specialist Norbert Stanzel (right) who bear the responsibility. Dr. Volker Sellmeier, Head of Technology Development at INDEX, and his team provide support for technical questions.

Using five-axis turn-mill centers for gear cutting

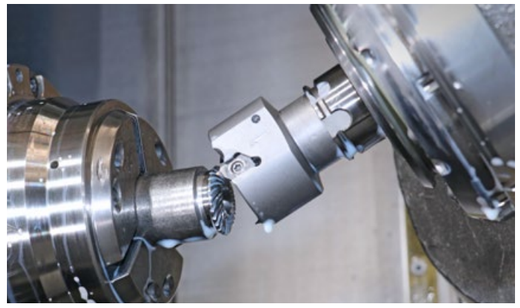
INDEX has been offering the possibility to integrate additional machining technologies into its turn-mill centers for more than 20 years now. The first time the specialists from Esslingen demonstrated how to use these machines for gear cutting was at EMO 2013. Dr. Volker Sellmeier, Head of Technology Development at INDEX, explains: "After already having successfully integrated grinding processes in our five-axis turn-mill centers, we thought of trying it with gear cutting processes as well—which we finally managed to achieve."

The technological integration was so successful that INDEX now exclusively covers its own demand for bevel gears using an INDEX R300 and both offers and frequently sells gear cutting technologies as a core competency on the market. Volker Sellmeier goes on: "The INDEX gear-cutting process can be implemented on our R and G-series turn-mill centers. We achieve significant advantages in terms of cycle time, process reliability, and quality on all these machines."

Short learning phase

The EWS management quickly realized the advantages that in-house complete machining of bevel gears would offer. They ordered an additional INDEX G220 and had the technology package for bevel gear cutting implemented. At first, this was uncharted territory for the EWS employees concerned. Since the start of the project, Norbert Stanzel is the lead for bevel gear hobbing. While the experienced machinist had never produced a serration to that point, he found that taking gear manufacturing into his own hands was a fascinating idea: "I immediately signed up for it and am still full of enthusiasm." The initial training at INDEX took less time than expected. He was fit for the job in two weeks instead of the six that had been planned. "The INDEX process makes gear cutting easy," says Stanzel. "The software queries ten parameters in a dialog, such as eccentricity and auxiliary angle. That's all it takes to define the entire bevel gear." The cycle then translates these values into the movements of each axis so that at the end the same relative movements are effected as on a conventional gear cutting machine.

Stanzel's tasks include configuring the gear cutting processes in terms of tension on the main and counter spindles as well as setting up the INDEX G220. As opposed to the conventional gear cutting process chain, in which the workpiece has to be set up on several individual ›



Bevel gear hobbing: the R and G-series INDEX turn-mill centers are particularly suitable for this gear cutting technology owing to their excellent static, dynamic, and thermal properties.

More customer success stories online:
› **index-traub.com/success**

Watch the film now:
› **index-traub.com/gear-cutting-video**

We have gained a lot of freedom in gear development and design ever since we started manufacturing our own bevel gears and sprockets.

Roland Sigel works as a design engineer at EWS Weigele

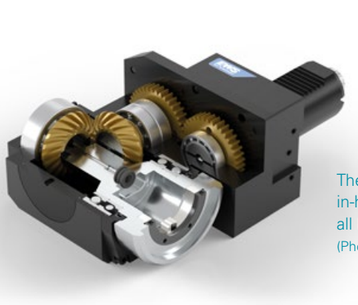
machines, all operations take place on the turn-mill center. The bevel gears are turned, drilled, milled, and finally cut off on a single machine. Moreover, brushes for deburring can also be set up.

Norbert Stanzel subsequently checks the quality of the bevel gears that are produced. This includes visual inspections right next to the machine, as well as detailed checks in the measuring room using a 3D coordinate measuring instrument. "We achieve high levels of precision. The maximum deviation in the topography is about 3 µm. That's sensational."

Advantages for gear development

In addition to the practical work on the machine and with the measuring instrument, there's also a theoretical part, which at EWS is handled by Roland Sigel. The mechanical engineering technician mainly designs driven tools, including many special versions to customer specifications. His verdict: "We have gained a lot of freedom in gear development and design ever since we started manufacturing our own bevel gears and sprockets. We can now make prototypes, test them, and optimize our driven tools without delays—which ultimately benefits our customers." In his opinion, the INDEX bevel gear hobbing cycle works flawlessly and "we have become very fast in using it. The cycle time for a common bevel gear is only a few minutes in total, knowing that gear cutting generally only takes less than a minute."

The investment for gear cutting on the INDEX G220 is relatively low compared to special machines. Frank Weigele talks of overall costs in the lower seven figure range, which includes the turn-mill center, the technology package with the software, the required measuring equipment, test equipment, etc. "With about 1.5 shift operation, we expect an ROI of less than ten years," reveals Weigele. "However, this does not account for the advantages resulting from in-house production, such as just-in-time deliveries, the ability to do limited production runs, to run trials, etc. In this respect, the INDEX process is very valuable to us." X



The bevel gears produced in-house are used in all EWS driven tools. (Photos: EWS)

EWS—Precision meets Motion

The company established in 1960 by Ernst, Gerhard, and Karl Weigele started out as a manufacturer of laboratory equipment and a supplier for hydraulic components. Today, EWS Weigele plays a leading role in the area of tool mountings for CNC lathes and turn-mill centers.
The group employs close to 500 employees. The product range includes about 30,000 different tool systems, from the most standard all the way to customer-focused special developments. The family business carries out most of its production at its headquarters in Uhingen near Stuttgart. Additional production sites are located in the USA and in South Korea. EWS also owns distribution and service subsidiaries in Russia, China, and Turkey.

EWS Weigele GmbH & Co. KG
Maybachstr. 1, 73066 Uhingen, Germany
› **www.ews-tools.de**

The Virtual Machine convinced us early on. We purchased an INDEX C65 automatic production lathe with a Virtual Machine as long ago as 2008. As an integral part of our digital process chain, it now helps us to drastically reduce the setup time on the machine.

Sascha Auber is Managing Director at Lauble GmbH

A Virtual Machine as a basic element in the process chain

In recent years, Lauble GmbH Präzisionsdrehteile has digitized its entire tool inventory. Since the 3D twins of the tools can now be loaded into the machine virtually at the push of a button, the INDEX software has become an integral part of the process chain. The company can thus make full use of its strengths, such as shorter changeover times on the real machine, reduced collision risk, and easier optimization of part programs.

At Lauble, everything revolves around precision and surface quality. This requires well-trained employees, the right machines, and a sophisticated production structure, as Managing Director Sascha Auber points out. There are currently 31 lathes in the production facility, 19 of which are from INDEX: INDEX C200, C100, C65, and ABC automatic production lathes, each in several versions. "We can rely on INDEX products—that includes peripherals, such as the INDEX Virtual Machine," confirms Sascha Auber.

He invested in this software solution back in 2008 to get a 1-to-1 3D reproduction of the real machine and simulate the entire machining process. Sascha Auber: "We do not only use it to prevent collisions, but also to reduce changeover times and to optimize part programs. Moreover, the Virtual Machine is ideal for training new employees in three-channel programming." That said, the effort required for virtual setup was not to be underestimated. After all, each tool had to be created in 3D and maintained with its exact dimensions—a task that requires time in addition to CAD knowledge.

This is how the management came to the idea to restructure the cutting tools available at the plant using a tool management system, to create a digital twin for each tool, and to use it for further processes. "We used this approach for the Virtual Machine, for example. And this greatly facilitates setup," explains Florian Kreuzberger, assistant to the management in charge of digitizing the tools.

It took Lauble GmbH two years to restructure and convert all the tools into 3D twins. "In any case, it was well worth the effort," confirms Sascha Auber. Among other things, the digitized tools can now be transferred directly into the Virtual Machine via a specially generated interface. Eberhard Beck, Head of Control Technology at INDEX, explains: "Our software relies on an open data format that enables suppliers of CAD/CAM software and tool management systems to program suitable interfaces. If the tool is clearly described, which now is the case at Lauble, the Virtual Machine can read and use the data."

Florian Kreuzberger explains: "Every time we receive a new tool we start by creating a digital version of it in the tool management. When setters subsequently create their tool plan for a certain part, they pick the required components from the tool management system. When they notice that the NC programs needs to be optimized and they want to set up the Virtual Machine, they open the interface and transfer the entire tool plan. This generates a file that makes all the tools available in the Virtual Machine in 3D format, so that they can load the turret per drag-and-drop."

As a result, setters can load the Virtual Machine much faster than before using the digital version of the tools. This approach practically eliminates any faults. Employees are motivated to use the Virtual Machine to squeeze out a few more seconds from the production process. Moreover, the identical behavior of the virtual and real machines allows for simulations that reassure operators and facilitates initial training on the very demanding INDEX automatic production lathes.

Florian Kreuzberger provides an example, a magnet casing that has several milled sections and bore holes: "We manufacture this component on an INDEX C200. The machine setter used the Virtual Machine to optimize the machining operations with up to three tools simultaneously at work at times. This took him about three hours—time that he would have otherwise spent on the real machine. Instead of being stopped for the optimization, the machine can continue to machine during this time." X

More customer success stories online:
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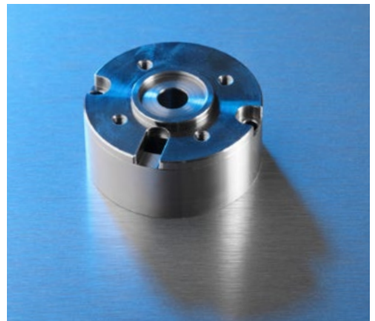


Specialized in high-precision turning operations

At Lauble GmbH, about 50 skilled employees at the headquarters in Dunningen produce high-precision turned parts made of machining steel, non-corrosive steel alloys, non-ferrous metals, and plastics in batches from 500 pieces to about a million.

Lauble serves a great variety of industrial sectors, such as control engineering, mechanical engineering, electrical engineering, medical technology, and automotive suppliers.

Lauble GmbH Präzisionsdrehteile
Steinbeisstraße 2, 78655 Dunningen, Germany
› **www.lauble.com**

*better.**parts.faster.***

Automatically ensuring high quality

INDEX iXcenter solutions are not only suitable for implementing the loading and unloading of INDEX and TRAUB machines easily and entirely according to your wishes—they also pave the way for automated process control. If a workpiece is already placed in the right position in the robot hand, much more can then be done with it, e.g., quality control. All this requires is a measuring device, the corresponding measurement software, and the INDEX Closed Loop interface.

Highlights INDEX Closed Loop

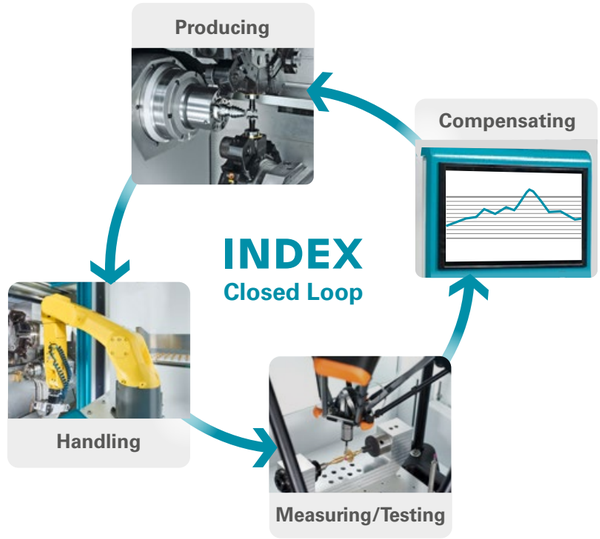
- Process based on measured values
- 100 percent check
- Document quality data
- Measuring equipment based on needs
- Substitution of post-process check
- Separate, independent measuring cell for vibration-free measurement quality

Automating with in-process measuring technology

Closed loop refers to a closed-loop control circuit that in the form offered by INDEX includes the items "Producing, Handling, Measuring/Testing, and Compensating". One example: The user manufactures a series of components on an INDEX C100 automatic production lathe. A robot in the connected iXcenter performs the handling of parts. It picks up the blank from the pallet, inserts it into the machine, and removes it after it has been machined. The robot then hands it over to the Equator™ testing device from Renishaw installed in the iXcenter, and finally deposits the measured part back onto the pallet.

The Renishaw Equator™, with its ideal testing performance for this process, records the relevant dimensions that are read in real time for the respective component by the intelligent process control (IPC). The IPC communicates with the machine's control system via a closed-loop interface of the INDEX iXpanel. The interface makes it possible to attribute the transmitted measuring characteristics to the tool concerned and to use corresponding corrections.

Using the measurement strategy software is simple: users can pre-define the required measuring processes individually for each component up to full measurement and also define tolerance ranges and correction values. Tool corrections are updated accordingly and an entirely automated process control can be implemented without any operator intervention. The usual causes of process instability—for instance, tool wear and thermal effects—can thus be compensated. Users can also take a picture of the trend curve at any time. A graphic representation of the analysis is shown both on the measuring cell's panel and on the iXpanel Cockpit.



Benefits of INDEX Closed Loop

What is particularly convincing about the INDEX Closed Loop is that the observance of tolerances is achieved with a controlled process rather than using static process control and manual corrections. It takes place immediately without any delay, in other words without any waiting time for the measuring room. This allows for autonomous production. Also, another benefit is that INDEX supplies the entire system from a single source—from the lathe to the iXcenter robot cell, from the test equipment all the way to the Closed Loop interface. X

Watch the film now:
› **index-traub.com/closed-loop-video**

INDEX iXacademy— customized training to achieve top performance

For you as a user to get the most out of your INDEX and TRAUB machines, we offer an extensive training program consisting of about 150 different programming, CAD/CAM, operator, servicing, and software training courses. The majority of these take place in our central training center at our Reichenbach/Fils site. However, we'll gladly come to you: we provide training and instruction in our branch offices, at our sales partners' premises, on site at your premises, and even online—anywhere across the globe.

INDEX iXacademy—Customer instruction and training

The training program at our iXacademy ranges from basic training—for example, in CNC programming—to standard training on our machines, all the way to highly specialized offers. We focus on the needs of our customers, who we support from the time of machine purchase. After all, certain processes, such as maintenance and even automation, are often very demanding, and we are happy to stand by you with our expertise.

This is why we recommend that our customers get "start-up support" the first time they purchase a machine, which means that an INDEX employee will be assisting the machine operator during the first production order. Another way to get help is for customers to purchase the Virtual Machine software package in advance so that they can start training on the PC and prepare for the later production before the machine is delivered. However, the greatest and most diverse benefit comes from our training program, which will prepare your machine operators, programmers, and service team to fulfill their tasks.

Customized training packages

The iXacademy, currently a team of 34 employees, is responsible for all aspects of customer training. Specialists are on hand to cover all topics: technicians, master craftsmen, and skilled workers with a lot of practical experience and training under their belts. They meet every customer at their current level of knowledge and provide them with preemptive advice on the courses that will be useful for them and the order in which they should follow them. Because the number of participants is limited to four for operator training courses and eight for theoretical training courses, trainers are able to adapt the content of the course individually to the participants.

Our customers are unanimous in agreeing that the efficiency of in-person courses cannot be surpassed in the areas of operation and servicing. Customers can internalize practical maneuvers and procedures on our machines and assemblies under near-real conditions during the training course.

Online training, a seminal extra

Our training offering has never ceased to evolve with the machines, technological advances, and market requirements. Over the years, it has become more diverse, more customer-focused and—as the name iXacademy suggests—more digital.

The fact that digitization has taken a big step forward in our society is—so to speak—one of the few positive effects of the past two years of the pandemic, since in-person courses were not possible to a large extent. The iXacademy management therefore developed new online formats for theoretical training courses. ›

Our trainers are always ready to tailor the content for the participants, since the number of attendees is limited to four for operator training courses and eight for theoretical training courses.

»

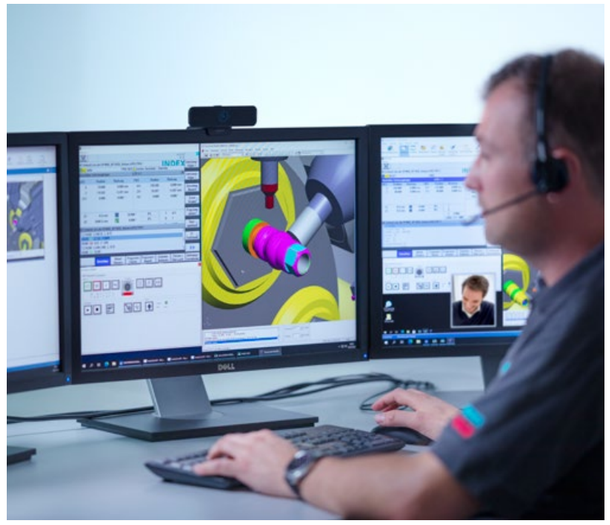
The individual training course for the Siemens CNC 840D sl provides us with such in-depth knowledge of this control that we are able to adapt it to our operational requirements. Our instructor, Timo Fetz, presented the course contents in a very competent and practical manner. We now feel well prepared for our daily tasks with our new INDEX G220 turn-mill center.

From left to right: **Stefan Peter, Harald Stoiber, and Fabian Bomeisl**, operators and programmers of an INDEX G220 at AVS Römer GmbH & Co. KG, in Grafenau, Germany

»

Building on my prior knowledge, I wanted the operator training for the TRAUB TNL20-9B to fill knowledge gaps in the areas of WinFlex software, B axis, and programming in a very targeted manner, so that we can guarantee a safe and successful production start for our new TNL20-9B. My praise already applies to the planning of the training, which made it possible to address individual desires and requirements for the course. Our highly motivated and competent trainer was able to fully meet all my requirements.

Andreas Fey, technician,
Head of the lathe shop at Sarnow Präzision GmbH, in Mainhausen, Germany



Be it on site or remote: we do everything we can with our training program to turn our customers into total pros on their machines.

"What's important here," explains Dieter Dohr, online specialist among the INDEX training and demonstration technicians, "is that these are not merely webinars for passive consumption, but rather events during which participants are actively involved and interact as if they were sitting in a training room."

Online training courses are available for all theoretical topics, such as the Virtual Machine, programming, etc. and are in line with in-person courses as far as possible. In other words, for the time of the course, participants have access to a virtual INDEX computer that features the same software as our computers in our training center. "Previous online participants have been so enthralled with the smooth operation and efficiency of these online training courses that we decided to include them as an integral part of our offering," says Dieter Dohr before going on to explain: "The advantages lie in how fast such an event can be organized and the lack of travel expenses, which is particularly interesting for customers abroad and for short training courses."

International training offering

To support all INDEX and TRAUB users across the globe from Reichenbach, the online events are available in German, English, and French (with an interpreter where required). Our subsidiaries INDEX USA and INDEX France also offer their own iXacademy events in their local markets as well as E-learning programs. X

NEW The training offering from INDEX France has been officially certified by the French government with immediate effect and thus INDEX France is now a „Qualiopi-certified" training provider. This certification stands for high quality and enables participants and businesses to have the training costs financed by the government bodies that support their training requirements.

Qualiopi processus certifié
RÉPUBLIQUE FRANÇAISE

Info and benefits INDEX iXacademy

- 150 different standard programming, operator, servicing, and software training courses available in our training center, at our customers' premises and online—anywhere across the globe
- Special training courses based on customer requirements (on measuring cycles, on technology packages such as bevel gear hobbing, grinding, etc.)
- Training center in Reichenbach/Fils with 12 training rooms, 16 machines, and numerous assemblies
- About 600 in-house training events each year with a total of 2,000 participants
- Bonus for all trainees: a free programming hotline that provides simple assistance when faced with issues with a contour or programming errors
- Online training in German, English, and French
- In-person training also at INDEX USA and INDEX France

› **index-traub.com/training**

Customers who buy our products not only get a machine, they get a complete offering that is tailored to their needs. This includes a wide range of theoretical and practical training courses covering a broad spectrum of topics.

Well-trained employees turn the machine into a model of success

Mr. Schelenz, you've been in charge of the iXacademy and thus of customer training since March 2022. Could you please introduce yourself briefly?

My professional life has been thoroughly marked by INDEX. After having completed my professional training here as a mechanical engineer in 1989, I started working with the pre-assembly and final assembly of G machines. I was working as a machine setter and completed a course alongside work to become a service technician. I was then assigned to commissioning, both at home and abroad, with lengthier stays in the USA and France. From April 2002, I led acceptance testing of turn-mill centers at the Reichenbach plant and from July 2007 the demonstration center in Esslingen. In August 2014, I switched back to the G machines and was responsible for worldwide on- site customer support. Since March, I now lead the Customer Training department where I can leverage all my INDEX experience.

What goals are you pursuing in your new position?

The basic goal is obvious. We want to pass on to our customers any and all expertise they need to use their INDEX and TRAUB machines in the best way possible. This means that we need to find the right ways to achieve this. That's why we constantly challenge and improve our training offering. This is true for our successful in-person courses and it especially applies to our new online formats, so that they come as close as possible to the high level of our in-person events. We are proud that all our online participants so far have confirmed the high quality of these offers. We want to continue improving them and even extend them with e-learning units in the future. However, they will never replace our in-person courses.

Why does customer training have such a high priority at INDEX?

Anyone who decides to purchase an INDEX or TRAUB machine chooses a very high-quality, high-performance product. To make full use of its cost-effectiveness, you must use all the possibilities that the machine has to offer. That requires a lot of know-how. We therefore do everything we can with our training program to turn our customers into total pros on their machines.

What should customers expect from the INDEX iXacademy and the customer training offering?

Customers who buy our products not only get a machine, they get a complete offering that is tailored to their needs. This includes a wide range of theoretical and practical training courses covering a broad spectrum of topics. We provide a highly qualified team as well as twelve fully equipped training rooms to achieve this. All the relevant INDEX and TRAUB machines as well as important assemblies are available, so that we can guarantee our training courses come as close to real-world conditions as possible. In summary, this makes us so flexible that we can address all the topics our customers may desire as well as any requirements they may have. X

Jochen Schelenz is the Head of the Customer Training department at INDEX

The Rolls-Royce among sliding headstock lathes

Prototyping demands speed and flexibility. Laubscher Präzision AG uses the TRAUB TNL12, a flexible sliding headstock automatic lathe that is perfectly tailored to its prototyping needs: compact, quickly convertible, and extremely precise.

By Anne Richter, editor at "SMM – Swiss MaschinenMarkt"

Permanent and targeted investments in new, better, and more efficient production means and buildings are a major prerequisite for Swiss manufacturing companies that want to stay alive on the global market while remaining profitable and delivering quality—and thus generate a basis for growth. A prime example is Laubscher Präzision AG headquartered in Täuffelen, Switzerland. The manufacturer of precision turned parts can look back on more than 176 years of tradition shaped by technology and innovation. The family-owned business now employs some 240 people, a remarkable headcount for a company that supplies precision turned parts. Millions of customer-specific and ready-to-install precision parts are produced daily on 500 production units in multiple-shift operation. The production area has been extended continually and now reaches a size of 22,400 m². Every year, 57 million watch screws alone leave the production facility at Lake Biel.

Service provider and specialist for the smallest precision turned parts

Laubscher not only considers itself a contract manufacturer, but also a partner and service provider. "When customers have problems with certain components, they can come to us. We then develop a common solution together with them," reports Mirko Laubscher, Head of Production at Laubscher Präzisions AG. In these projects, the focus is on quality and precision: "We are a globally acclaimed specialist for precision turned parts. We promise the highest quality. Each batch is subjected to a final check before it leaves the company," explains Laubscher. And, quality components of the highest precision require secure and well-coordinated manufacturing processes. The machine tool forms an essential basis for this. ›

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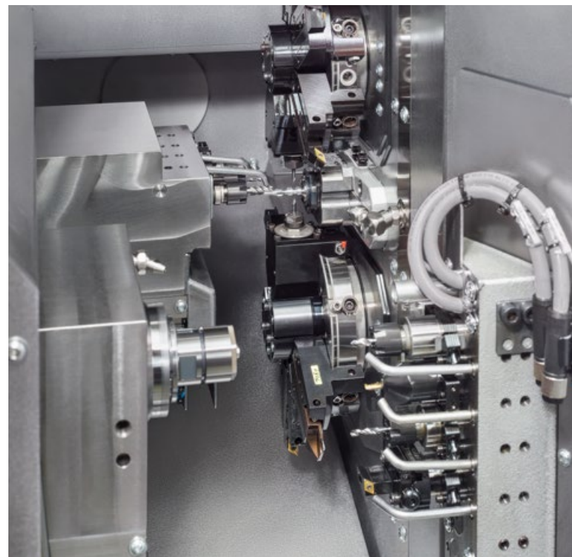
INDEX responded very quickly and flexibly to our requirements. This is very important to us, as we have to act very quickly too. This also applies to the TRAUB TNL12 and to rear-end machining. In this respect, they really listened to their customer. The points that were good have been kept for further development of the machine.

Mirko Laubscher is Head of Production at Laubscher Präzisions AG

The small TRAUB TNL 12 sliding headstock automatic lathe provides for a high level of flexibility and productivity. New: Front working attachment and counter spindle are each on a separate slide. The back working attachment with six tool stations on the rear side now enables three-axis machining on the counter spindle.

Sliding headstock turning with great flexibility and productivity

The second-generation of the TNL12 with 13 mm spindle clearance provides greater productivity and flexibility, while offering a small footprint. In addition to many other useful and improved features, the TRAUB TNL12 is now equipped with a servomotor and a high-ratio, backlash-free gearbox at the indexing drive on both turrets and, in connection with this, each with an interpolated Y axis that contributes to shorter chip-to-chip times and freer division of cuts. The functionality of the interpolated Y axis was initially frowned ›



From prototype to high-volume manufacturing: Laubscher relies on multi-spindle automatic lathes from INDEX for subsequent volume production. Extreme precision is required in this respect as well: for example, for medical technology parts.
(Photos: Laubscher)

upon by Laubscher. "Prior experiences have shown that interpolation of surfaces can never be entirely precise. That's why we had doubts," recounts Marco Schneider, Head of the CNC Cylindrical Turning department. What finally convinced them was test machining a special component that required turning and milling operations with the interpolated Y axis. "The result was flawless and the machine was bought on the spot," says Laubscher with delight.

Higher dynamic response and even greater precision

Even the high-speed movements for more dynamic response have been newly designed. Liquid-cooled motorized spindles replace the belt drive in the main and counter spindles. The new TNL12 achieves even greater precision owing to increased thermal stability that is obtained with the gray cast iron machine bed, which replaces the former welded steel construction, and the thermo-symmetrical design. The TRAUB TNL12 can now also be quickly converted from sliding headstock to fixed headstock operation. However, at Laubscher the machine is mostly used as a sliding headstock lathe during regular production. The flexibility of the machine was required elsewhere. "We wanted the machine for prototyping. We must be open to what our customers need, often at short notice."

As a premium supplier, INDEX's aim with the TRAUB brand is not only to score points with the machine alone, but also with all the peripherals and services that may come with it. Among other things, this includes coolant management and the high pressure system. Laubscher greatly appreciates this aspect. "The peripherals are exceptional. Other suppliers do not provide as clean a solution and it does not match the machine as perfectly," says Schneider with conviction. There are up to three pumps available for optimal cooling lubricant management. The cooling lubricant is cleaned by a compact belt filter with a filtration degree of 50 µm.

Control provides perfect continuity

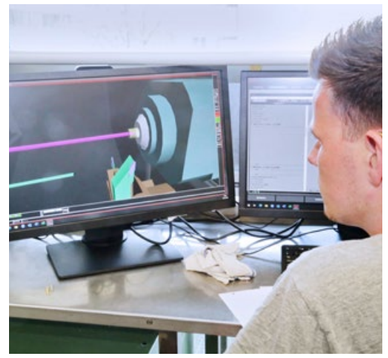
The current TRAUB TX8i-s control is based on a Mitsubishi control and is prepared for directly connecting the TNL12 to INDEX's digital iXworld. This guarantees continuity, which has a very high priority at Laubscher. "The performance of the TRAUB control is astounding. This is especially the case when you need to reprogram very frequently, as we do," reports Schneider. Existing data from the previous machine could thus be very easily integrated into the new machine. "Another advantage was that we could continue to produce without needing to readjust much. The machine concept works the same way and employees are already used to the basic principles from other TRAUB machines. In addition, the intuitive user guidance on the machine's iXpanel cockpit is a major advantage for employees," adds Schneider. ›

Quick and secure programming

Another important aspect for Laubscher is the TRAUB WinFlex IPS programming system that allows for programming directly in the workshop, on the machine, or on a PC. "This ideally predestines WinFlex for workshop programming," summarizes Marco Schneider before adding: "In my opinion, TRAUB is miles ahead of the competition with its WinFlex programming system." Optimized standard program blocks enable quick and secure programming. There are many pre-stored functions and programming cycles, so that users only need to enter a small amount of data, such as diameter and cutting depth for instance. In addition to the powerful programming, optimization, and simulation features, WinFlex offers a "Setup" and "Auto" mode using a 3D model, just as if you were standing in front of the machine. "The communication between machine and programming works flawlessly in this respect as well," confirms Schneider.

Good, respectful cooperation

Considering all the positive experience, Mirko Laubscher and the entire Laubscher team are very satisfied with their collaboration with INDEX.



The WinFlex IPS programming system allows for programming directly in the workshop, on a PC, or directly on the machine.

"INDEX responded very quickly and flexibly to our requirements. This is very important to us, as we have to act very quickly too," observes Laubscher. "This also applies to the TRAUB TNL12 and to rear-end machining. In this respect, they really listened to their customer. The points that were good have been kept for further development of the machine. Improvements were made exactly where they were needed," summarizes Mirko Laubscher and thus essentially gives the biggest compliment that a machine tool manufacturer can get: "Down at the workshop, we say TRAUB machines are the Rolls-Royce among sliding headstock lathes." X

Watch the film now:
› **index-traub.com/tnl12-video**

Manufacturer of turned parts with long-standing tradition

Laubscher Präzision AG was founded in 1846 and is still a family-owned business. Currently, Dr. Raphael Laubscher from the sixth generation is managing the company and the seventh is already integrated in the business. Some 240 employees work in a production area of about 22,400 m² and manufacture ready-to-install precision turned parts with diameters ranging from 0.3 to 42 mm.
Different types of steel, precious metal, non-ferrous metal, and light metal are machined along with other special materials. Depending on the customer's requirements, the batch sizes range from one thousand to several million units. In addition to machining for turning, milling, grinding, and threading operations, Laubscher also undertakes operations for heat treatment and galvanic plating treatment.

Laubscher Präzision AG, Hauptstrasse 101, 2575 Täuffelen, Switzerland
› **www.laubscher.swiss**

Using multiple spindles—the key to success for generations

As part of the MSM group, W.E. Schultz GmbH specializes in the production of complex turned parts in large volumes. To do this, it uses more than 20 automatic lathes with six spindles. Its latest investment: a CNC-controlled multi-spindle automatic lathe, the INDEX MS24-6. The turning specialists are enthralled with the high precision achieved with numerous features, such as the fluid-cooled spindle drum. They also praise the optimized setup concept, which is becoming increasingly important as volumes are on the decline.

Magnet-Schultz GmbH & Co. KG (MSM) headquartered in Memmingen, Germany, counts as one of the world's leading manufacturers of electromagnetic actuator, sensor, and valve technology. Established in 1912 by Adolf W. Schultz, the MSM group is still an owner-led family business, now in the fourth generation. It employs 2,500 people across the globe and has an annual turnover of about half a billion euros. MSM high-tech products are used as standard components and customer-specific special developments in various sectors, such as aerospace, automotive, electromechanical engineering, hydraulic engineering, medical technology, and pneumatic engineering. In other words, anywhere where there are high requirements in terms of technology and quality.

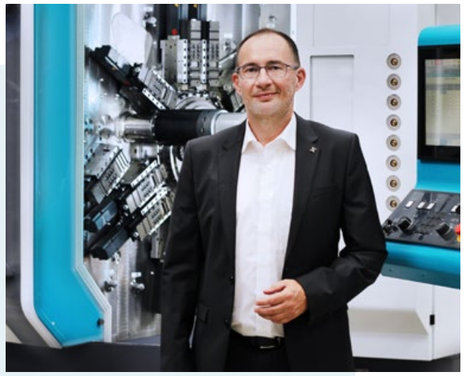
Automatic turning—optimized for the highest level of efficiency and quality

MSM electromagnets set high requirements on precision and quality. A corresponding manufacturing expertise and high level of vertical integration are indispensable. This is how high-precision cores, anchors, tubes, sleeves, and other turned parts required in large volumes are produced by the subsidiary W.E. Schultz in the Swiss town of Oberrindal. Today's MSM competence center for automatic turned parts has been part of the group since 1973 and headed by Alejandro Aranda Muñoz since 1997. The mechanical engineer left for Switzerland in the late 90s to build up the subsidiary, which had been entrusted with assembly work up until then, into a production site. "From the outset, we focused on manufacturing complex, high-precision turned parts, because the main plant in Memmingen needed these in large volumes," recalls Aranda. "To produce these parts as economically as possible, we already invested in multi-spindle automatic lathes back then."

The lathe manufacturer from Esslingen, INDEX, which initially supplied four cam-controlled, six-spindle INDEX MS25, has been a partner from the very start. "These machines are my personal ›

The W.E. Schultz production team working with (from left to right) Training Manager Alexander Jaksch and Production Manager Alexander Hildt highly appreciates the partnership with INDEX. Right: Bernd Reutter, Technical Sales Manager for multi-spindle machines at INDEX.

Not afraid of multi-spindle machines



Mr. Reutter, some machinists shy away from using multi-spindle automatic lathes, because they have great respect for sophisticated technology. Is using these machines really that difficult?
Clearly not. The decades-long experience of INDEX experts in the area of CNC-controlled multi-spindle machines contributed to creating supporting aids for operators as well as for NC programmers and production schedulers, which greatly simplify daily use and make them user-friendly. However, it is true that when the slides with their tools and the spindles are all moving at the same time during operation, looking inside the work area can be quite daunting. Yet, it is precisely this simultaneous machining that makes the multi-spindle machine so efficient, which is reflected in a higher output at 4 to 5 times shorter cycle times compared to single-spindle solutions.

What about setting up a multi-spindle machine, isn't it more time-consuming than setting up a single-spindle machine?
Well, this must be nuanced a bit. As far as the loading magazine and the spindles are concerned, the effort is higher depending on whether it is a 6 or 8-spindle version. However, in the work area itself, it is rather comparable. This is due to the fact that the tools to be set up for a multi-spindle machine are only on the slide, while on a single-spindle machine they are on the turrets.

A general trend towards smaller order sizes can be observed. From what volume does it make sense to use a multi-spindle machine?
Using a cam-controlled multi-spindle machine generally only makes sense starting with 100,000 pieces. For CNC multi-spindle automatic lathes, orders of about 10,000 pieces are profitable. For part families, their use is already very interesting from 2,000 pieces or less.

What has INDEX done to make setting up multi-spindle machines faster and to keep secondary times short?
We have developed a few improvements in this respect over the past few years. Let's start with planning and programming: Using our Virtual Machine, which represents an identical digital copy of the real machine, you can already program several products in advance, simulate the processes, and optimize them in terms of time. Moreover, setting up tools has become easier. For example, we offer the same W-serration known from the field of turrets on single-spindle machines on the slide, which guarantees a high change accuracy. In addition to that, we have developed an optional quick clamping system for turning tool holders. Furthermore, you can integrate Capto interfaces, turrets, and multi-tool holders. The latest setup accelerator is our CenterMaster (see p. 34), a software that simplifies the centering of drill holders in a user-friendly way.

For a long time, multi-spindle automatic lathes were mainly to be found in the automotive sector. This has since changed quite considerably and not only due to the imminent disappearance of the internal combustion engine. Who uses multi-spindle technology today?
The automotive industry still holds a large share. E-mobility also creates application areas for multi-spindle machines that we have catered to successfully. We have already been successful on several occasions in adapting our multi-spindle machines for future tasks by making minor adjustments to their design. We are winning a growing number of customers in medical technology, in the jewelry and watchmaking industry, in mobile hydraulics, in the sanitary sector, and among contract manufacturers with a large manufacturing spectrum. Because multi-spindle machines require comparably little space and operating effort, they are interesting for all machinists. The flexibility of our current multi-spindle concept opens up a wide range of opportunities.

The increasing complexity of components and the growing requirements on precision and quality are further trends.
The INDEX CNC multi-spindle machines can deliver very good values in terms of precision and tolerances. The complexity of components for bar and infeed part machining (integrated robot solution) can definitely be high. By the way, automation is also a noticeable trend. With the increasing demand for quality, users are increasingly moving away from bulk materials in favor of orderly part removal. Measuring devices integrated in external handling units with feedback to the control are another example of products with a growing demand. With our broad solution portfolio, we are in a very good position to speak to such requirements.

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

We are winning a growing number of customers in medical technology, in the jewelry and watchmaking industry, in mobile hydraulics, and in the sanitary sector.

There are more than 20 INDEX multi-spindle automatic lathes with matching bar loading magazines on the shop floor. Part discharge is performed with various solutions: from chutes to pallet systems.

Specialist in the use of six-spindle automatic lathes

In addition to these, the machine pool consists of more than 20 CNC-controlled automatic lathes—all with six spindles and bar loaders from INDEX. Their size ranges from the INDEX MS16 to the MS22, the MS32, and all the way to the MS40. "We have progressively extended our manufacturing spectrum and the capacity," explains Aranda. "Today, we're in a position to manufacture complex turned parts from bar stock with a diameter from 6 to 40 mm, generally in batches of 20,000 to more than five million pieces per year."

favorites," reveals the Plant Manager. "They are still in operation, run like Swiss clockwork, and reliably achieve the desired precision, which allows for an outer tolerance of only 14 µm for some parts. Of course, we've taken good care of the MS25 over all these years and had a complete revision performed at INDEX."

W.E. Schultz keeps its machinery at a high level. A new machine is ordered every year as an addition or as a replacement investment. "Especially here in such a high-wage country as Switzerland, we have to pay very close attention to profitability," emphasizes Aranda, "and that's why we keep up to date on possible improvements available on the market." When INDEX asked two years ago whether W.E. Schultz was ready to become a testing partner for the new multi-spindle automatic lathe INDEX MS24-6, the response was as follows: Yes, but without any guarantee that we will acquire the machine after the test phase. As Production Manager Alexander Hildt explains: "We only buy what really moves us forward—in terms of precision, quality, process reliability, and profitability." ›

We have progressively extended our manufacturing spectrum and the capacity. Today, we're in a position to manufacture complex turned parts from bar stock with a diameter from 6 to 40 mm, generally in series of 20,000 to more than five million pieces per year.

Alejandro Aranda Muñoz is Managing Director of W.E.Schultz GmbH in Oberrindal, Switzerland

W.E. Schultz keeps its machinery at a high level. A new machine is ordered every year as an addition or as a replacement investment. For the new multi-spindle automatic lathe INDEX MS24-6 W.E. Schultz was one of our testing partners.

More profitable with increased precision and complete machining

Expectations for the INDEX MS24-6, the successor to the successful INDEX multi-spindle machine MS22-6, were high. The performance of the INDEX MS40-6 already available in the pool of machines and which includes numerous features that increase precision and productivity fueled their passion. Alexander Hildt explains: "For example, the fluid-cooled spindle drum, which is now also available in the MS24-6. It further increases accuracy compared to an air-cooled version precision due to the improved thermostable behavior."

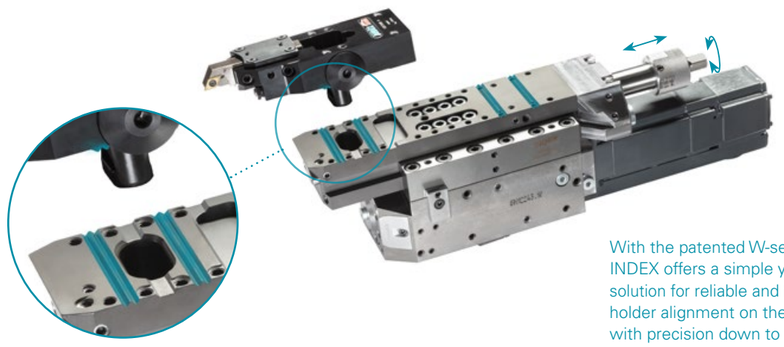
The Hirth serration on the synchronous spindle is also important for automatic lathes. "On the INDEX MS24-6, it also needed to considerably improve precision in rear-end machining," wished the Production Manager—and he was not disappointed. "We have parts that need to be accurate down to the hundredth of a millimeter even in the rear-end area. With the new INDEX MS24-6, we're able to achieve this in a single operation." The complete machining which is now possible results in significant savings.

W-serration simplifies setup

Alexander Jaksch, Training Manager and Deputy Plant Manager at the lathe shop, is enthusiastic about the ease of setup of the new multi-spindle automatic lathe and in particular about the quick clamping system with integrated W-serration on each cross slide. This enables operators to simply attach in the exact position the tool holder that is already preset in the X and Y directions. "The W-serration is great. With it, you're already at an angle on the slide and it saves half the time required for setup," confirms Jaksch.

He and his colleagues are happy that INDEX offers such efficient solutions especially when it comes to ease of setup. Because the trend at W.E. Schultz is for requested volumes to become increasingly small down to 10,000 or even 5,000 pieces. Setup time weighs heavily in the feasibility study under such conditions. "Continuous runs have become rare," confirms Plant Manager Aranda. "We convert the machines every other week on average." ›

Watch the film now:
› **index-traub.com/ms24-6-video**



With the patented W-serration, INDEX offers a simple yet effective solution for reliable and fast tool holder alignment on the tool slide with precision down to the µm.

More customer success stories online:
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As can be inferred from these statements, W.E. Schultz ended up buying the INDEX automatic lathe MS24-6 that had been initially supplied for testing purposes. The new machine enables the business to make full use of its expertise and the strengths of its machine pool. As an example, he mentions a housing with a 10 mm outer diameter and an inner diameter of 4.029 mm ±5 µm. The concentricity from bearing seat to bearing seat has a tolerance of 0.02 mm. This part is now completely turned from the solid on the MS24-6 from start to finish. "Now that's reliable," as practitioner Alexander Jaksch emphasizes. "Within the range of a 10 µm tolerance, we merely fluctuate by 2 to 3 µm, that's sensational."

Should the requirements become slightly more stringent, W.E. Schultz still has a card up its sleeve with the INDEX MS24-6: the machine can not only be used with six spindles, but also with two times three. While the machine at W.E. Schultz's premises only has one synchronous spindle, it can be retrofitted at any time with a second synchronous spindle for the double 3-spindle machine production variant or to halve the machining time on the cutoff side.

More efficient programming with the "Virtual Machine"

When it invested in the INDEX MS24-6, W.E. Schultz also broke new ground in programming, as Training Manager Jaksch says: "Up to now, most machines were programmed in a conventional manner. When we ordered the INDEX MS24-6, we added the 'Virtual Machine', which mainly promises benefits with new startups, i.e., for smaller volumes." This identical virtual copy of the machine can be used to plan, test, and pre-optimize new startups and workpiece machining in real time for the real machine. This reduces setup times and downtimes in the ongoing production and further increases process reliability and profitability. Alexander Jaksch: "We've had good experiences with it. Therefore, it is most likely that the next machine already being planned will also include the 'Virtual Machine'." X

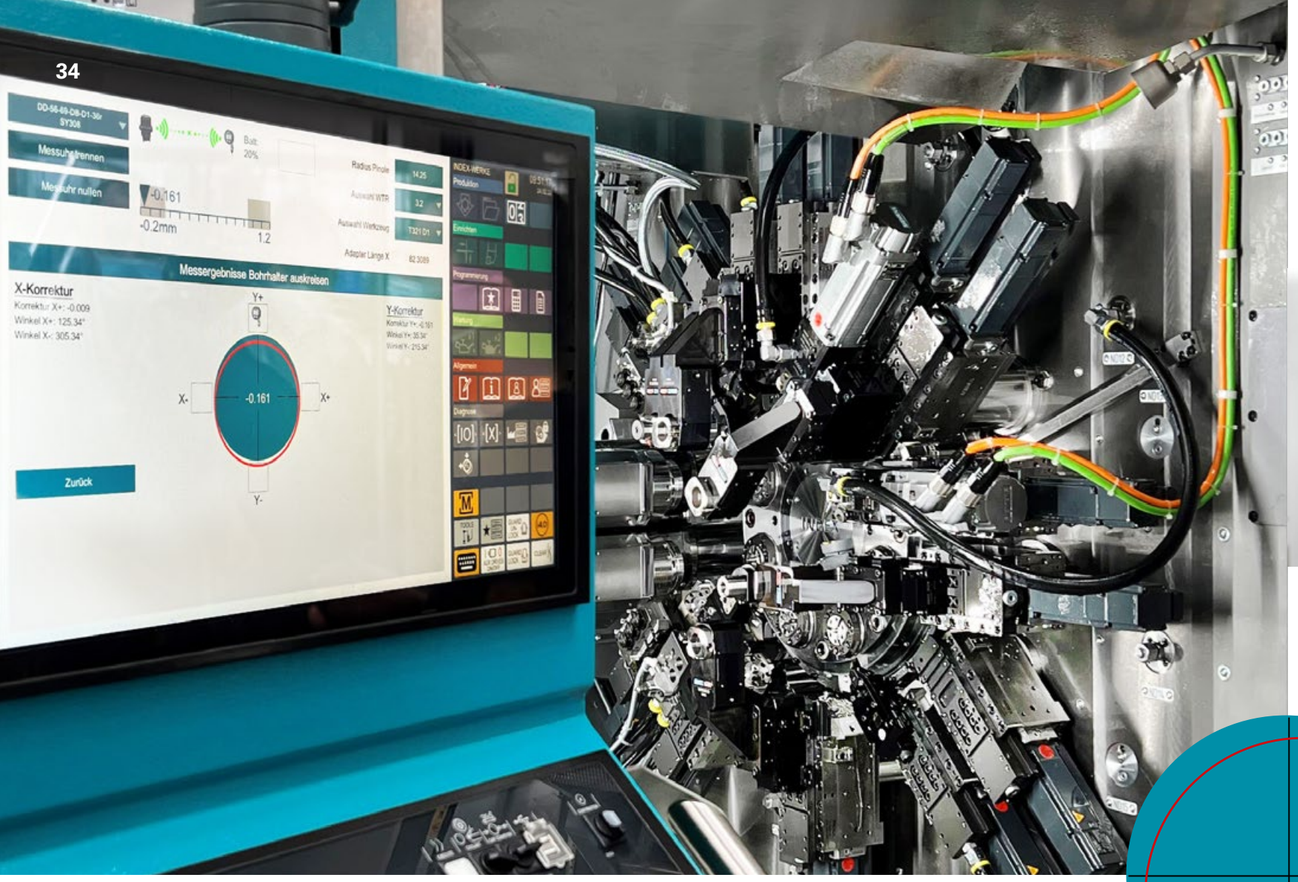
At W.E. Schultz, all turned parts—cores, anchors, tubes, sleeves, etc.—are machined from the bar. Demanding contours, high precision, and large volumes are required.

Specialized in multi-spindle automatic turning

W.E. Schultz GmbH has been part of the Magnet-Schultz Memmingen (MSM) Group since 1973. The company located in Ramsau/Oberrindal (Switzerland) has a headcount of 130 employees and generates an annual revenue of approximately CHF 20 million.

The product range primarily includes complex turned parts manufactured in medium to large volumes. Its offering also included the assembly of electromagnetic devices. Aside from the parent company, it also supplies external customers. The modern machine pool comprises more than 20 six-spindle INDEX CNC automatic lathes. A variety of measuring and testing equipment is available in addition to the individually automated module assembly.

W.E.Schultz
Ramsau 1733, 9604 Oberrindal, Switzerland
› **www.magnet-schultz.ch**



Centering drill holders made easy

Centering drill holders in multi-spindle automatic lathes is a necessary but time-consuming and inconvenient task—or it used to be! With our newly developed INDEX CenterMaster, this task is practically child's play: Based on a wireless dial gauge, a receiver installed in the control cabinet, and advanced mathematic software, the drill holders can be precisely aligned to the spindle—in less than five minutes!

There is hardly a multi-spindle automatic lathe that does not contain two, three, or four drill holders. To achieve precise machining, it is imperative that the central axis of these drill holders is placed exactly in the center of the spindle when setting up the drill holders. To guarantee this, up to now machine setters had to center each drill holder manually. This means that, using a dial gauge in the spindle and a quill in the drill holder, they determine the units of correction in the X and Y directions through trial and error. This is a task that can truly irk the machine setter. Accessibility is often so limited that they have to lean far into the machine and use a dental mirror to read the dial gauge. And this has to be done several times until the axes match up. The time required for centering and the quality of the results are entirely dependent on the experience of the machine setter for this decisive manual task.

INDEX CenterMaster simplifies and automates centering

Modern wireless technology and innovative software development have now put an end to this. Stefan Großmann, Head of Control Technology for multi-spindle machines at INDEX, explains: "With our CenterMaster, we have developed a solution that lets machine setters center drill holders very easily and quickly, as well as with great precision and reproducibility." The hardware required is a wireless dial gauge and a corresponding receiver, which is integrated in the control cabinet and communicates with the control. "However, the centerpiece of our setup assistance is the CenterMaster app," emphasizes Großmann. "It is based on software that we have developed that can be started from the control unit of the machine—the INDEX iXpanel. It ensures that the measured positions are transferred from the dial gauge to the control with a reproducible precision of < 5 µm."

The process is simple: the machine setter clamps the wireless dial gauge onto the spindle and the quill into the drill holder. The INDEX CenterMaster app connects to the wireless dial gauge with one click in the iXpanel operating panel. The machine setter moves the dial gauge to the home position and places the probe against the quill. He or she then starts the measurement and correction run. The CenterMaster starts by correcting the drill holder's alignment along the X axis—fully automatically. The software then ensures that the dial gauge and quill are perfectly aligned in the Y direction. The value by which the machine setter must correct the holder in the Y direction is shown both on the dial and on the control's operating panel. The correction is made automatically if the machine has an integrated Y axis, otherwise it is done manually. That's all there is to it to make the two axes overlap with a precision of < 5 µm.

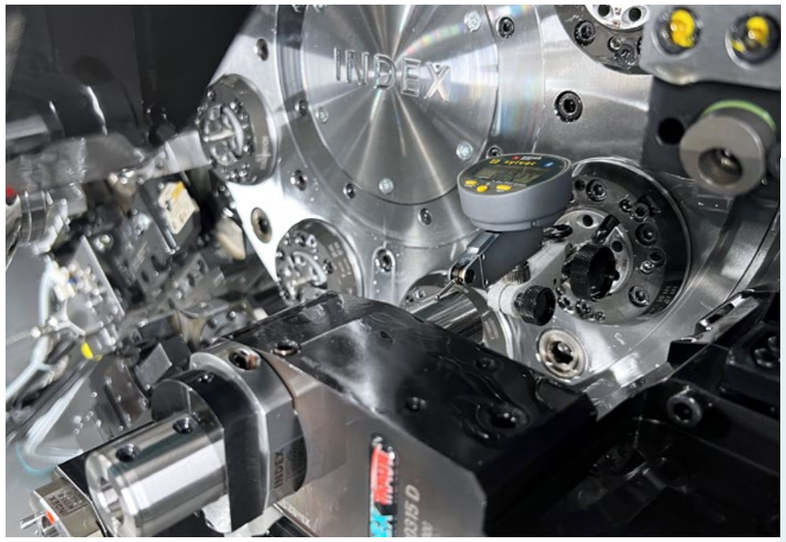
The results speak for themselves

According to control expert Stefan Großmann, the INDEX CenterMaster delivers overwhelming performance: "All machine setters we showed the CenterMaster were excited—be it from the alleviated workload or the speed of the centering process."

For all those who are interested: the CenterMaster is available for all INDEX multi-spindle automatic lathes with iXpanel (built 2015 and later) and can be retrofitted on them. The required measuring accessories can be found in the iXshop. **X**

Our new CenterMaster tremendously simplifies and speeds up the centering of drill holders on INDEX multi-spindle machines—with high accuracy and reproducibility. Considering decreasing batch sizes and the ensuing frequent tool setups, implementing the app pays for itself in no time.

Stefan Großmann is Head of the Control Technology department for multi-spindle machines at INDEX



Nearly every multi-spindle automatic lathe is equipped with drill holders. The new INDEX CenterMaster supports machine setters to precisely align them on the center of the spindle.

Highlights INDEX CenterMaster

- Fast: Precisely aligning a drill holder on the center of the spindle takes less than five minutes.
- Ergonomic: Wireless data transmission dispenses with the laborious reading of the dial gauge.
- Reproducible: Reproducible results with a precision of < 5 µm are achieved independently of the persons involved.

Watch the film now:
› **index-traub.com/centermaster-video**

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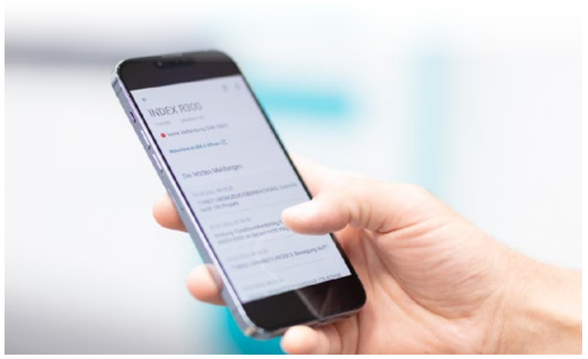
News ticker



NEW: iXmobile app for your smartphone

At AMB 2022, INDEX will be showing the new iX4.0 app iXmobile for iPhone and Android. You can easily add your machines to the iXmobile app and view the current production status at any time. You receive notifications when production stops or problems are imminent. This allows you to quickly identify and prevent costly downtimes, especially in low-manned or unattended operations.

In addition, you receive notifications about hydraulic oil leaks that are often difficult to detect and expensive over time, as well as excessive temperatures, or alarm messages that are problematic for the efficient use of your machinery.

With iX4.0 and the iXmobile app, you make the best use of INDEX's expertise in preventing machine downtimes and always have transparent information about the current state of your machines, no matter where you may be at the time. If you have already connected machines with the iXworld, you can simply download iXmobile from the Google Play Store or Apple App Store, install it, and start using it. Our iX4.0 experts will gladly answer your questions about digitizing your production at AMB 2022.

better.teams are.faster.

The Esslingen newspaper's run, which leads across the historical center of Esslingen, took place once again on Sunday 7/3/2022. In total, some 1,800 running enthusiasts participated in the run. As is customary, INDEX was once again on the starting line with a team of 26 runners in white and petrol-blue shirts. We congratulate all those who lined up for the race in INDEX's name for their excellent performance and thank everyone for their participation.

Flying high!

Bauberger AG gives the INDEX R200 wings and is expected to reposition the 12-ton machine at the Suhner Group in Lupfig/Switzerland as well as unload and put in place a second machine. We wish the Suhner Group every success with the current extension of their machine pool.

More than half a million!

We're happy to have welcomed our 500,000th visitor to our iXshop procurement portal. We extend our thanks to Thomas Schneider, Managing Director, and Werner Groß, employee at Prätecma GmbH in Urbach (Southern Germany). Local Sales Manager Andreas Breuling had the occasion to say thanks in person at the company's premises. You too can take advantage of our iXshop, which ideally supports your procurement processes: easily and efficiently order from more than 130,000 quality items. Register for free now and enjoy the benefits:

› **www.ixshop.ixworld.com**

Exhibition and event highlights 2023

IMTEX Bangalore, India	› January 19 – 25, 2023
INDUSTRIE Lyon, France	› March 7 – 10, 2023
INNOTEC, Bern, Switzerland	› March 7 – 10, 2023
INTEC Leipzig, Germany	› March 7 – 10, 2023
MECSPE, Bologna, Italy	› March 30 – April 1, 2023
CIMT Beijing, China	› April 10 – 15, 2023
OPEN HOUSE 2023	› April 25 – 28, 2023
EXPOMAFE, São Paulo, Brazil	› May 09 – 13, 2023
MACH TOOL, Posen, Poland	› May 30 – June 2, 2023
Paris Air Show 2023, Paris, France	› June 19 – 25, 2023
EMO, Hanover, Germany	› September 18 – 23, 2023

Arrived safely?

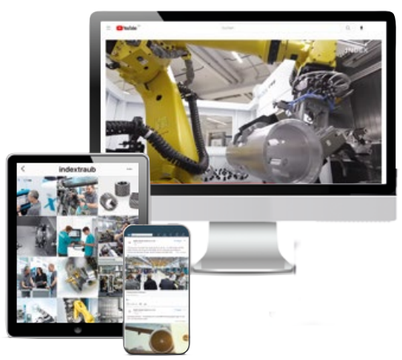
It is always thrilling to see your photos and videos about the arrival of our machines to your premises: per crane, fork-lift, or heavy-duty castors. Millimeter work on items weighing several tons. All our thanks to the experienced logistics experts!

We are happy to share spectacular deliveries and commissioning work on our social media channels. Feel free to link to us at **@index** or send an email to **marketing@index-werke.de** (please do not send attachments exceeding 10 MB, to make sure "everything fits through the gate" ;-)

Welcome@INDEX

The previous Managing Director of INDEX-Tornos Automáticos Indústria e Comércio Ltda. (IBR), Mr. Leopold Schenk, went into retirement at the end of 2021, after having successfully positioned the sales and services company on the market during his eight years at its head. Mr. Alexander Sadowskij was appointed as the new Managing Director of IBR, effective as of 1/1/2022. We wish Mr. Sadowskij and his team continued success going forward.

Alexander Sadowskij



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

INDEX

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