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DECO 10 Plus

"Instead of scrapping excellent machines, we give them a new lease on life with technological upgrades that reduce energy consumption and extend their production capacity for another 20 years."

Benoît Defrasne Head of Market Support – Tornos SA

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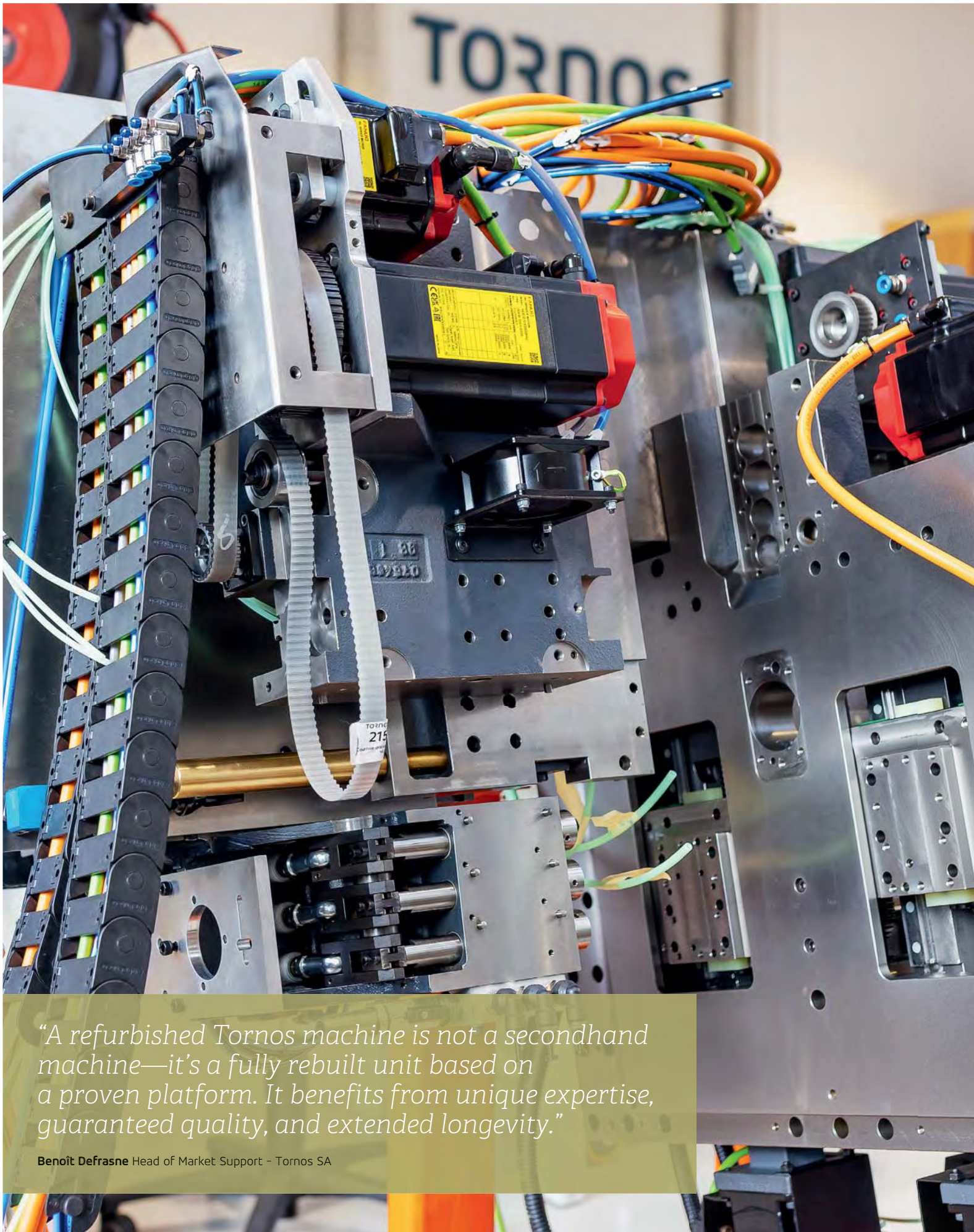
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“A refurbished Tornos machine is not a secondhand machine—it’s a fully rebuilt unit based on a proven platform. It benefits from unique expertise, guaranteed quality, and extended longevity.”

Benoît Defrasne Head of Market Support - Tornos SA

A new lease on life for your machines

Premium overhaul of the DECO 10 Plus and SAS 16 Plus

Benoît Defrasne Head of Market Support - Tornos SA

Tornos proves its full commitment to the circular economy with a high-quality overhaul service for its iconic machines. *decomagazine* (dm) spoke with Benoît Defrasne (BD), Head of Market Support, who explains why a machine refurbished by Tornos gains much more than just a second life.

decomagazine: The manufacturing industry is increasingly talking about the circular economy. How does Tornos fit into this approach?

Benoît Defrasne: Since inventing Swiss-type machining, Tornos has always pushed for more efficient manufacturing processes—starting with bar turning, then automated loading, bulk part recovery, and fast tool changes. As a result, Tornos has always designed machines that are both precise and robust, built to last.

For us, the circular economy isn't a new "greenwashing" trend—it's part of our DNA. Our "Plus" program for refurbished and upgraded machines proves this. Instead of scrapping excellent machines, we give them a new lease on life with technological upgrades that reduce energy consumption and extend their production capacity for another 20 years. It's both a sustainable and highly cost-effective approach for our customers.

dm: The DECO 10 Plus is at the heart of this initiative. Why this machine in particular?

BD: The DECO 10 Plus is an icon in the Swiss-type turning industry, specializing in the machining of precise, moderately complex parts up to 10 mm in diameter. Originally designed for both performance and flexibility, it remains a benchmark in micromechanics today.

Through our refurbishment and modernization program, we integrate a new computer numerical control (CNC) system, state-of-the-art motors, and

optimized control software, restoring the machine's performance to that of a brand-new machine. It's important to note that while many customers can provide us with their existing DECO 10 for an upgrade to DECO 10 Plus, we can also supply a fully refurbished unit from our stock within five days—taking back the old machine in exchange to ensure business continuity. We can even provide one without a trade-in if the customer needs to increase capacity.

dm: What exactly does a DECO 10 Plus refurbishment include?

BD: This is far more than a simple refresh of the guides and bearings! Each machine undergoes a rigorous process: complete disassembly, cleaning, replacement of essential performance components such as spindles, guides, ball screws, motors, sensors, and wiring. We also realign the geometry and test all axes to ensure optimal precision.

We even repaint the machine—essentially making it brand new again. It comes with a full warranty and the same durability potential as when it was first manufactured.

dm: You also offer an overhaul for the SAS 16, transforming it into a SAS 16 Plus. What are the key advantages of this refurbishment?

BD: The SAS 16 receives the same level of meticulous refurbishment as the DECO 10 machines refurbished to become DECO 10 Plus machines, which is especially impressive for those familiar with this cam-driven multispindle machine. It remains unmatched in producing moderately complex parts with outstanding productivity and cost per part, even compared to modern CNC machines.

We completely disassemble the machine, restoring every critical component, including the barrel, slides, and locking mechanisms. Every part is inspected and



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replaced if necessary. The electronics are upgraded with a new CNC system, offering improved precision and flexibility.

dm: What tangible benefits does this modernization bring to users?

BD: We've optimized energy consumption, reducing it by up to 50%, and improved the machine's ergonomics for a better user experience. For example, the chip tray has been enlarged for more efficient evacuation, and machine sealing has been reinforced to ensure a cleaner working environment while complying with current Conformité Européene (CE) standards. Additionally, we've introduced new features, such as the ability to add digital cross slides. This allows customers to combine the high productivity of cam-driven machining with the flexibility of CNC programming for more complex or precise operations.

dm: What are the key advantages for customers choosing a "Plus" machine over a new one?

BD: I don't think the choice should be framed as one machine versus another. It's the specific application—both technically and economically—that dictates the best solution.

Similarly, choosing a partner is about aligning with their industrial philosophy. Tornos has a long tradition of innovation aimed at delivering the lowest cost per part.

When considering the application, the answer is clear: the DECO 10 Plus is still a DECO machine. As a refurbished unit, its role is to complement an existing machine fleet and established applications. This keeps the incremental investment cost minimal, as well as maintenance expenses—since modernization ensures the availability of spare parts and service support for another 25 years. In these conditions, the total cost is obviously more attractive than purchasing a new machine.

For the SAS 16 Plus, the case is even stronger. These machines are supplied for applications where the simplicity of the parts makes a multispindle solution unbeatable in terms of productivity and cost.

dm: How does this approach align with Tornos' sustainability goals?

BD: We firmly believe that the future of the industry depends on using resources more responsibly. There's a lot of greenwashing in the industry today, but by

refurbishing our machines, we significantly reduce waste production and the need for raw material extraction.

This is a concrete commitment to more sustainable manufacturing—benefiting both our customers and the environment. Many countries now offer subsidies for such initiatives, making these refurbished machines an even more attractive investment. Additionally, the lower energy consumption of modernized components helps reduce both operational costs and carbon footprint.

dm: Does Tornos offer this service only for the DECO 10 and SAS 16?

BD: No, we offer this service for a wide range of machines. These two models are highlighted due to the large number of units installed at customer sites and their solid engineering, which ensures the longevity we guarantee.

That said, every project is tailored to specific needs. We are currently refurbishing MultiDECO multispindle machines and larger Swiss-type DECO models, such as the DECO 13 and DECO 20. In some cases, we can even carry out certain refurbishments directly on-site if that's more suitable.

dm: Any final words for companies still hesitating?

BD: A refurbished Tornos machine is not a second-hand machine—it's a fully rebuilt unit based on a proven platform. It benefits from unique expertise, guaranteed quality, and extended longevity.

With this program, we're not just extending the life of machines—we're providing a sustainable, high-performance, and cost-effective solution for today's and tomorrow's industry.

Discover
the assembly of
an SAS 16 Plus
in video





Machining area of a Bumotec s181 machining center

A fast-growing European key player

from Portugal

Bruno Correia, CEO, Art in Vogue SA and Daniel Fernandes, Director of Operations

Art in Vogue (AIV) is a small and dynamic company installed next to Porto in Portugal, composed of two entities; AIV Metal Solutions for metal treatments and forming and AIV Metal machining to produce high-precision components.



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Thirty-five specialists are actively involved in bring customers' expectations to life. The company claim, "You imagine, we create," was born from the vision that customers' creativity must not be curbed by production solution limitations. Finding the right way to produce is the added value of Art in Vogue.

An unusual business development (by Bruno Correia)

Forty years ago, the company was involved in the production of components for bags in the leather goods segment. In the year 2000, this typical industry from Portugal faced an economic crisis which forced us to imagine new market opportunities. We jumped into the shoe production business with a large volume of exports, before entering the precision part machining business.

In 2018, we decided to invest in CNC machines; we were already equipped with turning machines.

Today we have 11 CNC machines and the first mill/turn center fully equipped from Bumotec installed in Portugal.

The strategy concerning this new investment is to strengthen our position in the luxury goods market, especially in the watchmaking industry where doors are already opened to us, to confirm jewelry activities, and to develop medtech and defense markets opportunities.

New Building for Art in Vogue (AIV)
Metal Solutions in Gondomar, Portugal.



“Nowadays the s181 is considered as a star in our shop floor.”

We export 30 % of our production to France, Germany, Switzerland and sometimes Italy.

The first step in the mill/turn machine environment (by Bruno Correia)

When we started with machining parts, we thought that investing in a Bumotec machining center from Starrag was out of our financial reach. It was a goal which seemed inaccessible. Then the business grew along with the customers' expectations for accurate and complex parts to produce. We were used to engineering solutions ourselves to adapt our production means to reach customers' goals. But we reached the limit, and we needed to invest in high-end solutions to be efficient and reassure customers.

Personally, I knew about Bumotec machining centers as a few customers were already equipped with their technology, I convinced our Operational Director Daniel Fernandes, who was not accustomed to this mindset, that it was the right solution to work 24/7 without interruptions by just loading bars and get finished parts produced. His mind has changed and today he only wants to work this way and he thinks that it is the most efficient and productive production solution.

When the decision was made to invest, we contacted Tornos Ibérica which is the Bumotec agent in Spain and Portugal. We discussed our project and then we visited Starrag Vuadens, home of Bumotec in Switzerland and we became the first Portuguese company equipped with the s181, the most complex dual working station 9-Axis machining center from Bumotec.



Bruno Correia, CEO, Art In Vogue SA (left) / Daniel Fernandes, Director of Operations, Art In Vogue SA (right)

The choice of the s181 was made in consideration of two parameters: first, with the efficiency of the machine due to the counter-spindle working in hidden time, we could easily cut production time by 40%. Then, even if this machine is one of the most complex machining centers by Bumotec, it offers incredible possibilities in terms of production being cost-effective: stable in production and equipped with a bar feeder, it works autonomously 24/7—even during weekends.



Bumotec s181 installed at Art in Vogue (AIV) Metal Solutions, Portugal

A profitable investment to stick to the fast-changing European market demands (by Daniel Fernandes)

My first contact with a Bumotec machine was at a customer facility in Switzerland. I did not know about this technology but then after our visit at Starrag Vuadens I discovered an amazing machine concept working with efficiency. Nowadays the s181 is considered as a star in our shop floor.

We were used to have turning machine as well as some milling machines from other brands and this is our first mill/turn center.

The concept of the machine was totally different from what we used to know. We had to learn the philosophy of programming. To do so, we had an efficient training from the Bumotec applications team which allowed us to feel at ease rapidly. The result is clear, the part which is currently being produced on the s181 was initially done on a turning machine with multiple setups. We gain 50% of production time and the quality of the finish is now far better.

Training sessions by Starrag Vuadens SA were provided in two steps. The first one was during acceptance process of the machine production and the second one was here in our factory when the machine was installed.

Whether we need process support from Bumotec headquarters in Switzerland or mechanical support from their Portuguese partner, the response is fast and efficient.

Our whole team is now confidently working with this technology. We have specialists who are able to deliver parts which are often of better quality than the one submitted by the customer as a reference model.

In the past we sometimes had to decline a contract proposal as we did not have the capabilities to produce complex parts. Now we can handle most of the machining parts projects in all market segments.

The current part being produced on the Bumotec s181 is an attachment in the leather goods segment. We had a contract for large quantities and we started to produce before acquiring the Bumotec machine, which was estimated for six months of production

“Whether we need process support from Bumotec headquarters in Switzerland or mechanical support from their Portuguese partner, the response is fast and efficient.”

time. Now working 24/7 and reducing cycle time by 50%, we know that we can do the whole production in around three months.

In addition to that we did some tests to machine with different raw materials such as cobalt, stainless steel, titanium or brass, and the result was qualitative, and the lifetime of the tools increased.

As we recently acquired the Bumotec, we still need to learn about life tool limits.

As simple as a morning routine (by Daniel Fernandes)

The daily routine is quite simple: When we arrive in the morning, we control the parts produced during the night, then we check the tools and clean the machining area. Fortunately, we have some spare tools in the tool magazine in case of breakage during the night so that the machine will automatically control and replace the tool, if necessary, without manual intervention. Finally, we add some bars in the bar feeder, and we relaunch production for the day. We do a check before leaving for the night and we repeat the routine again in the morning.



Art in Vogue (AIV) Metal Solutions headquarters in Gondomar, Portugal

The vision of the evolution (by Bruno Correia)

My vision for the next five years is to become a sub-contractor reference in Portugal in precision machining before reaching the same status in Europe. My strategy is to diversify in the medtech industry and defense segment with connectors while expanding in the luxury world.

On the other hand, we are expanding the galvanic process of anodization to give a complete solution for raw materials as well.

We built this new building extension for our machining division; we have surface space available to welcome a new Bumotec machine in the future when the business reaches a crucial point.

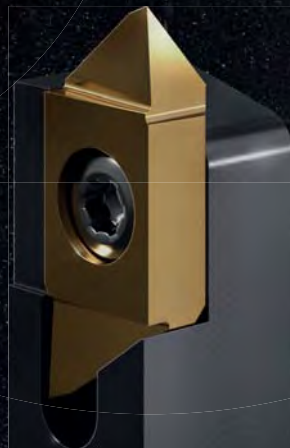
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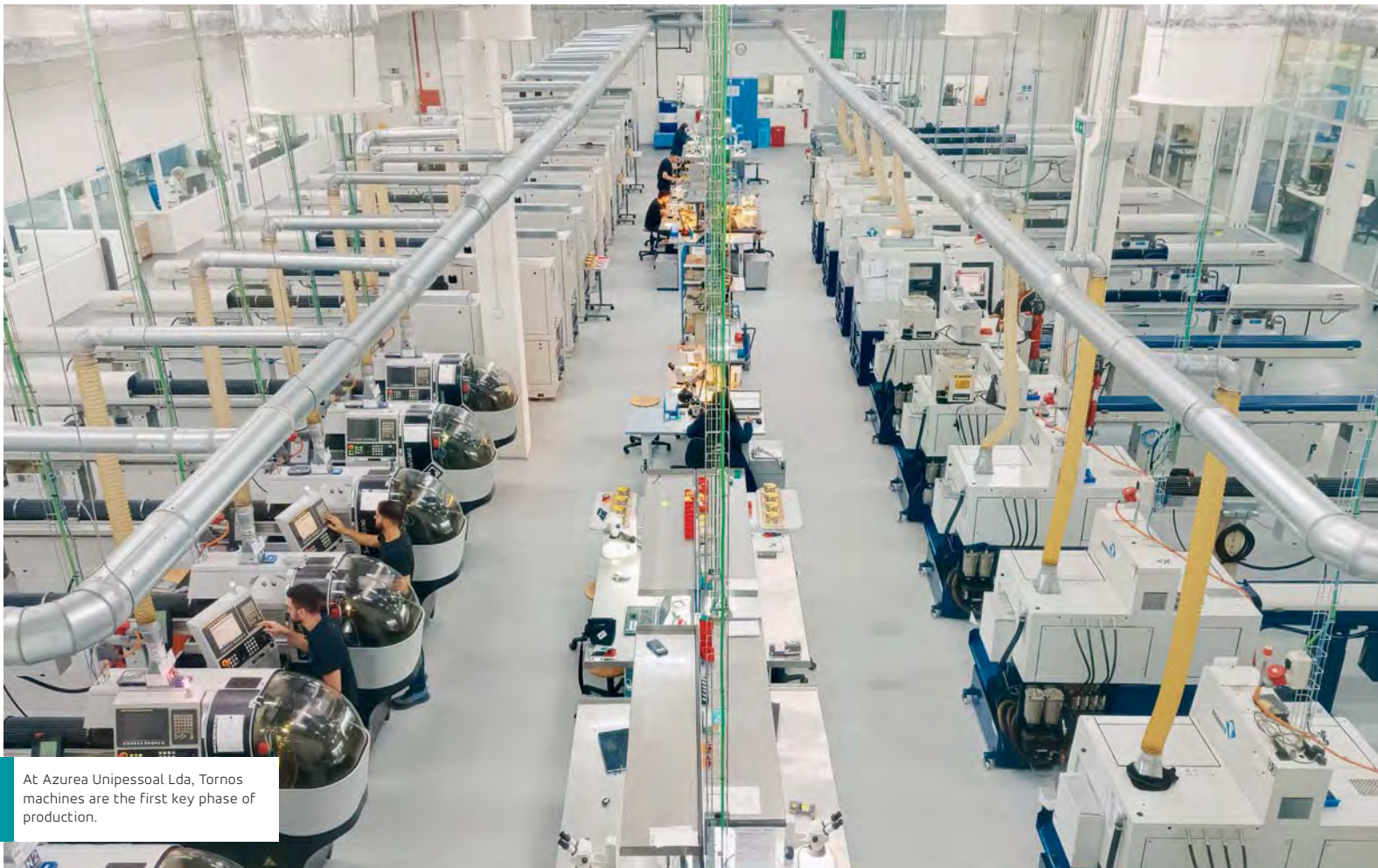
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At Azurea Unipessoal Lda, Tornos machines are the first key phase of production.

AZUREA UNIPessoal LDA:

Swiss expertise

*meets Portuguese
industrial innovation*

Since 2012, Azurea Unipessoal Lda has established itself as a benchmark in the field of microtechnology and watchmaking. Under the leadership of Vincent Skrzypczak, the Portuguese entity has undergone remarkable expansion, distinguishing itself by its ability to meet complex technical challenges while maintaining exceptional quality. With over 50 computer numerical control (CNC) machines, including 30 Tornos automatic lathes, Azurea Unipessoal Lda demonstrates how innovation and tradition can coexist harmoniously.

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A strategic location and unique know-how

Created to meet the growing demand from the Azurea Group's Swiss companies, the Portuguese subsidiary was set up in Maia, near Porto, an industrial hub renowned for its skilled workforce.

"Duplicating our Swiss know-how in Portugal was a major challenge, but we were able to train and support our teams to achieve our objectives," explained Vincent Skrzypczak, CEO of Azurea Unipessoal Lda.

With a modern working environment and state-of-the-art production tools, Azurea Unipessoal Lda specializes in the manufacture of assembled components for watch movements. Technical challenges are met through close collaboration with Tornos, a key partner in machine selection and skills transfer.

“We worked closely with experts from Tornos Ibérica, particularly during the Covid period, to perfect our skills on TISIS and TB-DECO.”

Innovation at the heart of Tornos machines

At Azurea Unipessoal Lda, Tornos machines are the first key phase in production.

“With models such as the SwissNano and EvoDECO, they enable us to meet our demanding precision and repeatability requirements.

The SwissNano, in particular, stands out for its ease of use and accessibility,” explained Vladimir Leitão, an expert on the production team. “They are highly intuitive machines, ideal for producing components down to diameters of less than 4 mm, with optimum visibility of axis movements.”



EvoDECO models, equipped with independent tool systems, enable simultaneous roughing and finishing, thus improving productivity. In addition, TISIS and TB-DECO software offer powerful tools for synchronizing operations and simplifying complex programming. Azurea has even adapted certain functions, such as bottom extraction on SwissNano machines, to meet its specific needs, illustrating its innovative spirit and need for verticalization.

A fruitful collaboration with Tornos

The acquisition and integration of Tornos machines, such as the EvoDECO and DECO models, have played a crucial role in Azurea Unipessoal Lda's growth.

"These machines enable us to produce complex components with unrivalled stability and repeatability. This perfectly meets the precision requirements of the watchmaking industry, where every micron counts," Skrzypczak explained.

The partnership with Tornos is not limited to machines. The Azurea Group invests in the in-house training of its employees to ensure that its know-how continues to thrive. These courses are taught by in-house trade experts or by service providers such as Tornos. Employees therefore benefit from regular technical training and responsive support to optimize the company's manufacturing processes.





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Discover
our video report



"We worked closely with experts from Tornos Ibérica, particularly during the Covid period, to perfect our skills on TISIS and TB-DECO," Leitão emphasized. This training has enabled the team to take machine operation even further.

An ambitious future

In the space of 10 years, Azurea Unipessoal Lda has multiplied its production by 18—growth supported by strategic investments in technology and skills. With 4,000 square meters of factory space and expansion projects underway, the company

is positioning itself to integrate new technologies, including single- and multispindle solutions from Tornos.

"Our aim is to stay at the forefront of innovation while anticipating market needs," Vincent Skrzypczak added.

Shared values and a common vision

Azurea's culture is defined by commitment, ambition and flexibility, values also embodied by Tornos. Combining Swiss precision and Portuguese dynamism, Azurea Unipessoal Lda perfectly illustrates the potential of internationalization. With partners like Tornos, the company is ready to meet tomorrow's challenges and continue to innovate for the watchmaking industry and beyond. For further information:

azurea.ch



The modernized human-machine interface, equipped with a touchscreen, simplifies operation and programming.

Safeguarding the future

of production tools with Tornos

For over a century, Tornos has innovated to meet the evolving needs of the most demanding industries. Faced with the growing challenges of sustainability, energy efficiency and competitiveness, Tornos has established itself as a key player in the modernization and maintenance of production equipment.

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The DECO 10 Plus and SAS 16 Plus machines embody this visionary approach. By combining the strengths of proven technologies with cutting-edge innovations, Tornos is redefining productivity standards while extending equipment life and reducing its environmental impact.

Discover how these advances are transforming production tools into durable, high-performance enablers of a promising industrial future.

SAS 16 Plus: a new standard of excellence

For over a century, Tornos has distinguished itself in the machine tool industry by its precision, mechanical expertise and commitment to innovation. With 60 years' experience in multispindle technologies, the company has delivered over 5,000 cam-type and computer numerical control (CNC) machines worldwide. The SAS 16 Plus perfectly illustrates this legacy of excellence, while meeting the contemporary challenges of demanding industries such as



automotive, electronics and medical. Enter the future of precision manufacturing with the all-new SAS 16 Plus. This revolutionary machine merges the raw power of traditional cam technology with the unlimited possibilities of CNC machining. This extraordinary combination marks the beginning of a new era in production. It pushes the boundaries of performance and redefines what's possible in the manufacture of small, complex parts.

An innovative response to modern challenges

Companies looking to reduce waste, optimize costs or attract skilled operators will find the SAS 16 Plus to be an ideal solution. Here are the main advantages of this revolutionary machine:

- **New CNC and human-machine interface (HMI):** The modernized HMI features a touch screen and simplifies operation and programming.
- **Advanced servo motorization:** Spindle and cam-shaft speeds are digitally adjusted, guaranteeing greater flexibility and precision.
- **CNC cross slides:** Two ISO-programmable slides offer improved precision with barrel corrections.
- **Independent CNC drilling/threading unit:** Drilling and threading speeds can be adjusted without changing gears.

The SAS 16 Plus offers the best of both worlds: the robustness of cam technology and the flexibility of CNC control. This combination allows complex operations to be carried out with ease, while optimizing processes. Thanks to fast tool holders and standard tooling, it reduces costs and maximizes productivity, adapting easily to market developments and production challenges. The SAS 16 Plus guarantees precision, reliability and adaptability with up to two CNC cross slides for precise operations such as turning or threading.

Additional features:

- **X travel:** 22 mm, **Z travel:** 50 mm, **feed speed:** 12 m/min
- **Motorized tapping and drilling system:** bidirectional tapping up to 16,000 rpm with consistent performance, even for demanding applications such as M10 threading in steel
- **Intuitive touch interface:** simplifies setup and optimizes efficiency by minimizing downtime

A new lease of life for cam-type machines

By recovering the precision and reliability of a classic cam-type machine with top-of-the-range Tornos components, the SAS 16 Plus extends equipment life while reducing waste. With a precision of up to 0.025 mm on each cam slide, this machine is ideal for companies seeking to maximize productivity while minimizing costs.

Impressive energy savings

Compared to the previous SAS 16 DC model, the SAS 16 Plus reduces energy consumption by 58%, saving up to 485,000 kWh over 15 years. This significant reduction reduces operating costs as well as carbon footprint, thus meeting growing sustainability requirements. With advanced servo technologies and a cost-effective CNC, it perfectly meets the expectations of companies sensitive to sustainability and cost reduction.

Why choose the SAS 16 Plus?

- **Improved durability:** complete disassembly, overhaul of wear components, and compliance with Tornos factory standards
- **Optimized flexibility in daily use:** cutting element management system and centralized cooling system
- **Superior ergonomics:** Enhanced user experience, thanks to an optimized access door and articulated arm CNC interface

With the SAS 16 Plus, Tornos offers an ideal solution for combining productivity, precision and durability, while taking a significant step toward a more eco-responsible future. This machine redefines standards for modern businesses.

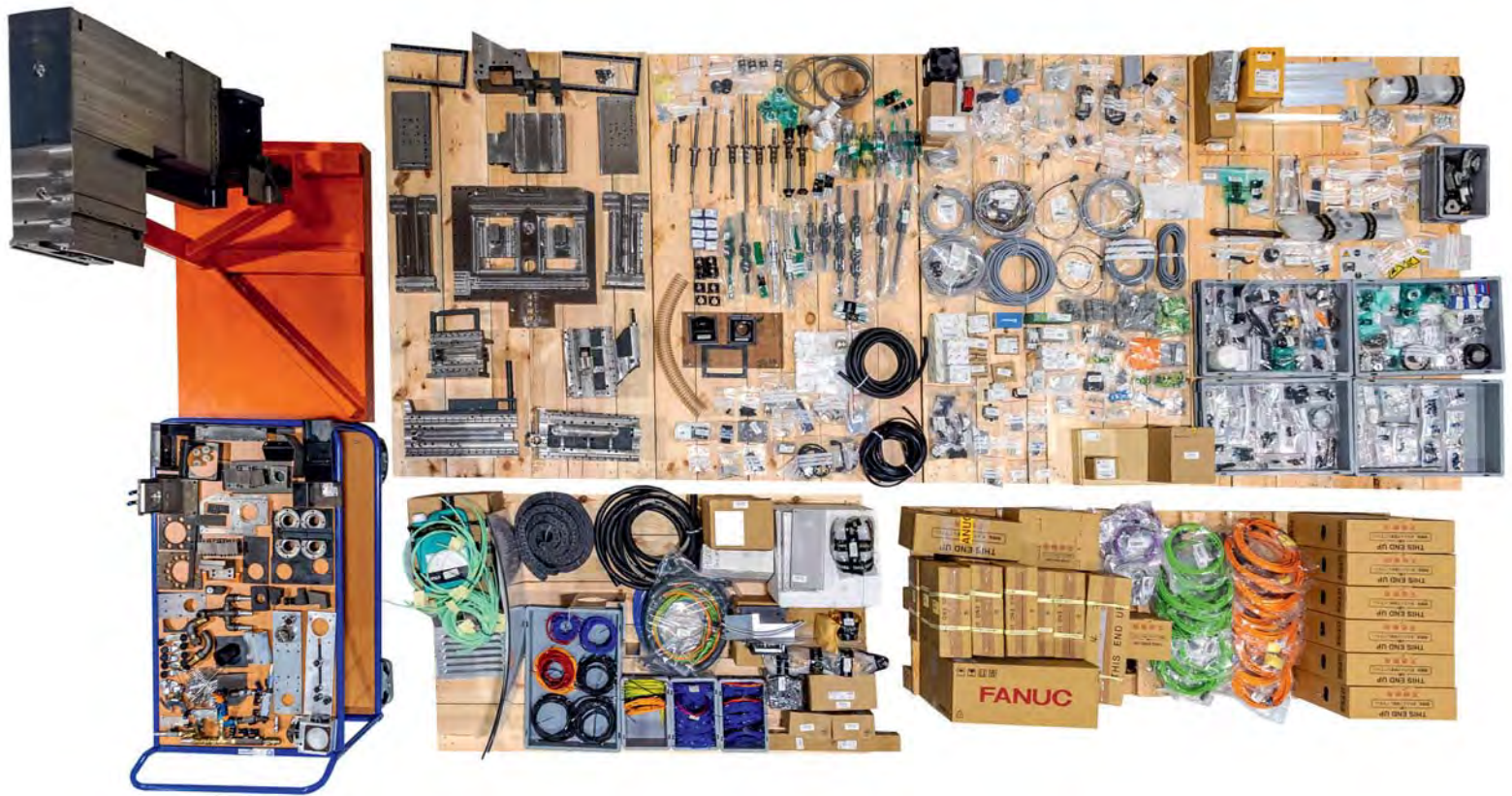
DECO 10 Plus: A technological and environmental revolution

In 1996, Tornos introduced the DECO 10, a compact, ultra-productive machine that set new standards of CNC machining. With its four independent tool systems and innovative TB-DECO software, it offered visual and intuitive optimization of operations, rivaling the performance of cam-type machines. Today, Tornos is going one step further with the DECO 10 Plus, an evolution that combines technological innovation and environmental commitment.

An in-depth transformation

The DECO 10 Plus is not simply an overhaul of the original machine, but a complete transformation. Although its skeleton is based on an existing DECO 10, every element has been meticulously





dismantled, inspected and modernized. Essential components such as ball screws and guide elements are replaced, and the entire structure is cleaned and repainted.

The main innovation is the complete replacement of the electrical system and the CNC. The DECO 10 Plus adopts a latest-generation FANUC 31i-B5 CNC, featuring a modern color screen, USB port and interface mounted on an articulated arm. This technological leap not only improves the machine's performance, but also extends its lifespan while reducing its environmental impact.

State-of-the-art equipment for Industry 4.0

The DECO 10 Plus is equipped with nine linear axes and two C axes for extended machining possibilities. It can handle bar diameters of up to 10 mm, with main spindle speeds of up to 16,000 rpm. The counter-spindle and transverse tooling systems provide optimum flexibility for complex operations.

Discover
the assembly of
a DECO 10 Plus
in video



New technologies include Active Chip Breaker Plus (ACB Plus) software for advanced chip management and enhanced productivity. The TISIS ISO programming solution offers an intuitive interface and real-time analysis tools, reducing setup time and maximizing efficiency.

Optimization doesn't stop there: The DECO 10 Plus features a cyclic centralized lubrication unit to ensure efficient maintenance while minimizing lubricant losses. An energy-efficient LED lamp improves lighting in the machining area, reducing overall energy consumption. These improvements reflect a clear commitment to sustainability and energy efficiency.

Comparison: DECO 10 Plus and EvoDECO 10

Tornos also offers the EvoDECO 10, which represents a different evolution. Equipped with liquid-cooled, motorized spindles and an additional Y axis in counter-operation (Y4), the EvoDECO 10 offers ultra-short acceleration times and increased thermal rigidity. It also incorporates a PC for direct program editing.

The DECO 10 Plus, on the other hand, is aimed at those who wish to combine modernization and durability at a controlled cost. Both machines are compatible with accessories from the DECO range, guaranteeing maximum flexibility.

A solution for the future

The DECO 10 Plus symbolizes Tornos' commitment to providing innovative, environmentally friendly solutions. By extending the useful life of existing machines and adopting modern technologies, Tornos enables its customers to reduce their ecological footprint while improving productivity.

With the DECO 10 Plus, enter a new era where performance and sustainability go hand in hand.

tornos.com





In September 2024, Tornos presented the Swiss XT 32 at AMB Stuttgart, equipped with two independent tool slides allowing simultaneous operations on a medical part.

SWISS XT:

the new- generation

milling and turning center

Designed to meet the most demanding requirements of the medical, automotive and connector industries, the Swiss XT is a high-performance milling and turning center. Combining technology, flexibility and innovation, it redefines the standards of modern machining thanks to its outstanding capabilities.

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With up to 20 simultaneous rotating tools, it performs milling and machining operations with remarkable efficiency and fluidity. By reducing cycle times while maintaining exceptional machining quality, the Swiss XT becomes the essential solution for the most complex productions. The machine can be equipped with up to five motors, maximizing torque for optimum performance.

Every detail of the Swiss XT has been designed for continuous optimization. Its two independent tool slides enable simultaneous roughing and finishing, while working complex materials such as 100Cr6 steel. It offers a machining capacity of up to ap 1.9 mm f0.15 mm/rev, guaranteeing unrivaled precision even in intensive production environments.

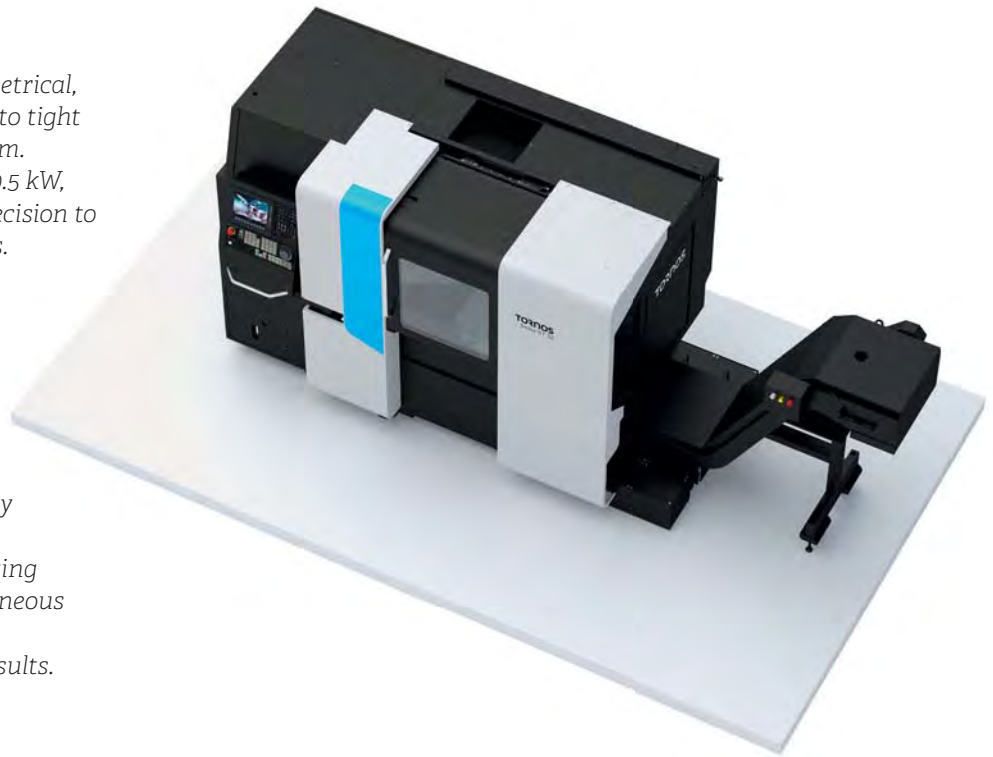
Incomparable thermal stability

The Swiss XT is also distinguished by its thermal stability. In less than 30 minutes, it achieves a constant accuracy of 3 µm, enabling consistent production

even with frequent tool changes. Its symmetrical, stable structure limits thermal deviations to tight tolerances: X1 to 2 μm and Y1 and Y2 to 3 μm . With powerful spindles developing up to 10.5 kW, the Swiss XT combines robustness and precision to adapt to the most demanding applications.

Maximum flexibility and productivity

Among the Swiss XT's major assets are its two independent tool slides, an innovation that is revolutionizing modern machining. By anticipating production runs through precise tool preparation, they optimize every cycle. Standard or specific configurations reduce costs while minimizing downtime. The ability to carry out simultaneous counter-operations significantly increases productivity and guarantees consistent results.



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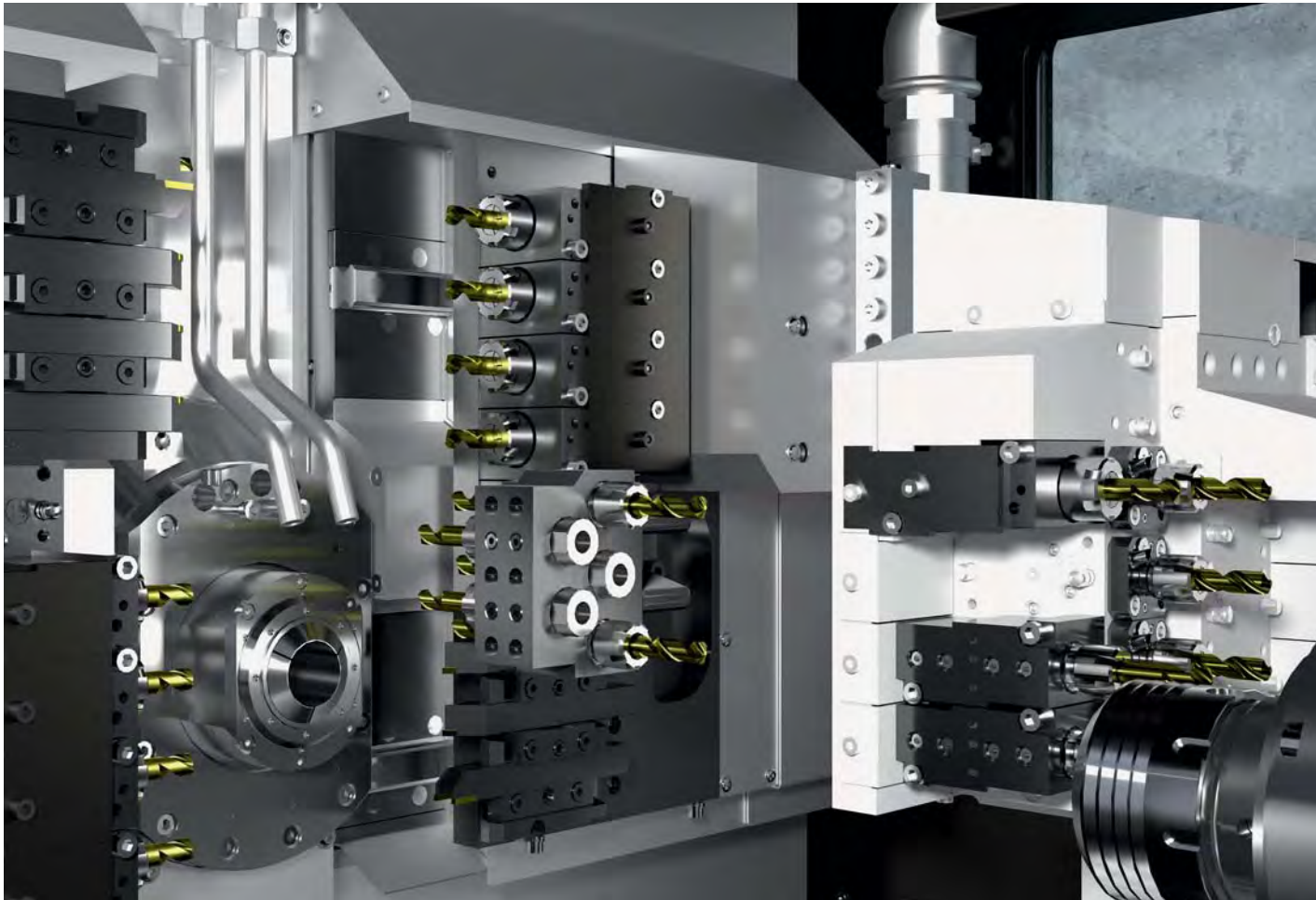
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A range to suit every need

The Swiss XT offers several configurations to meet the specific needs of each workshop:

- The **Swiss XT 16**, available with 8 or 9 axes, handles diameters up to 16 mm
- The **Swiss XT 32**, designed for parts up to 32 mm in diameter.

This versatility, combined with an ergonomic, intuitive design, makes it easy to get to grips with and use the machine on a daily basis. Operators benefit from an optimized working environment for enhanced productivity and comfort.

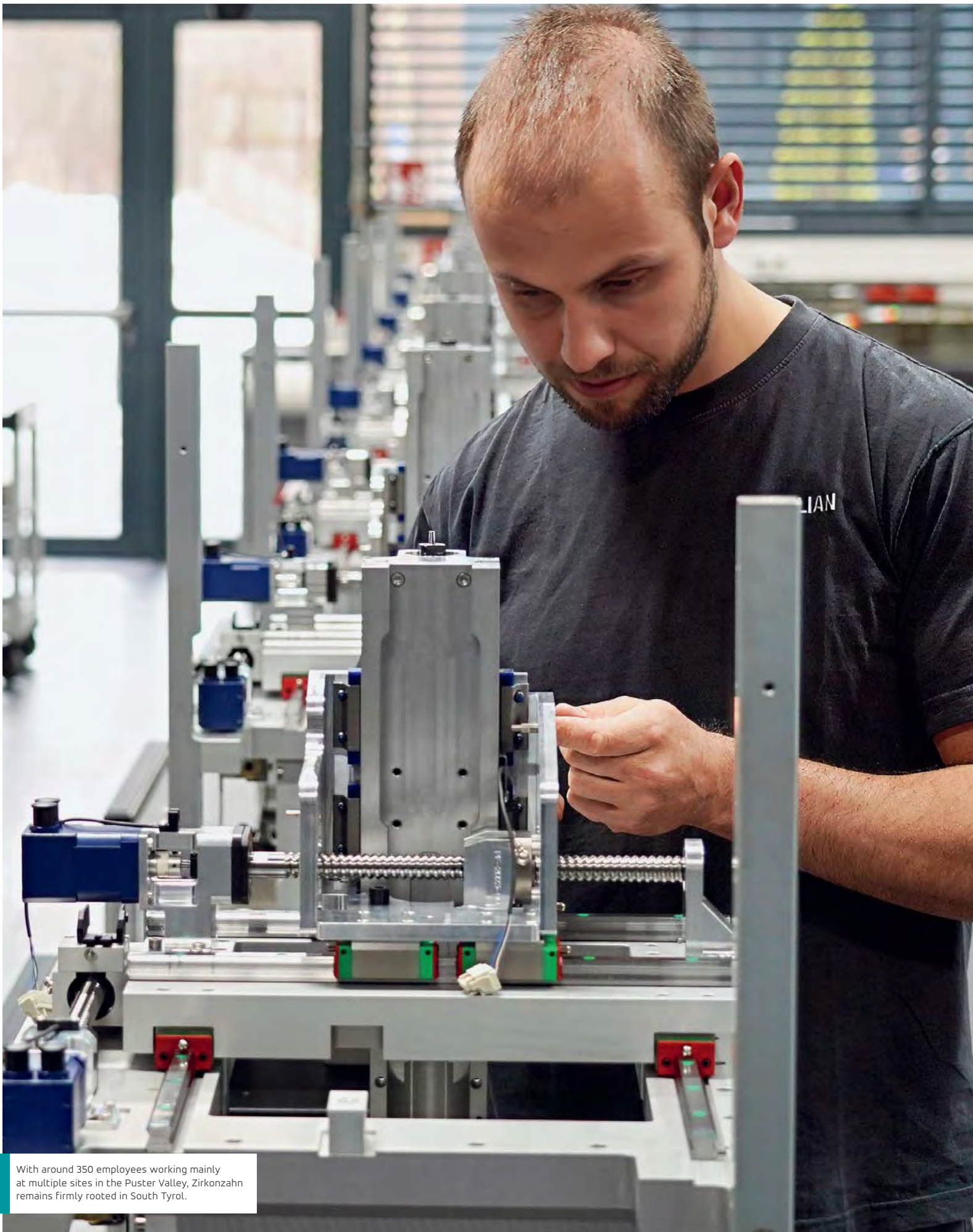
The solution for modern industry

The Swiss XT is more than just a machine; it's a technological revolution in machining.

Combining power, flexibility and precision, it offers manufacturers a complete solution to today's challenges. Whether it's for complex production, high-speed requirements or tight tolerances, the Swiss XT ensures consistent, long-lasting quality.

With the Swiss XT, every project finds an adapted, reliable and high-performance solution. By opening up new possibilities for modern workshops, it redefines tomorrow's machining standards. With the Swiss XT, precision and productivity go hand in hand.

[tornos.com](https://www.tornos.com)



With around 350 employees working mainly at multiple sites in the Puster Valley, Zirkozahn remains firmly rooted in South Tyrol.

ZIRKONZAHN:

tradition and innovation

for modern dentistry

Zirkonzahn Srl from South Tyrol, Italy, is much more than just a manufacturer of dental equipment.

The company was founded by Enrico Steger, a passionate dental technician, and embodies the perfect combination of traditional craftsmanship and technological innovation.



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A vision born in the mountains

Zirkonzahn's story begins with a bold idea: to transform zirconia into a revolutionary solution for dental laboratories. Enrico Steger, inspired by his surroundings and his roots, developed the Zirkograph, a groundbreaking device for processing zirconia. Since then, the company has continued to grow and become a major player in the dental industry, with a comprehensive product range that extends from titanium bases to advanced software solutions for the computer-aided design/computer-aided manufacturing (CAD/CAM) workflow.

"Modern dentistry requires precision solutions and constant innovation," Steger explained. "With our equipment and expertise, we have turned technical limitations into opportunities."



Products tailored to the needs of dentistry

Zirkonzahn excels in the production of dental components such as titanium bases and multiunit elements that meet the highest standards of biocompatibility and precision.

"We combine all processes under one roof, from the development of the tools to the production of the parts," Enrico Steger emphasized. This complete



control allows the company to respond quickly to customer requests and ensure consistent quality.

Zirkonzahn products are not limited to mechanics: The company also offers innovative diagnostic systems, such as the PlaneSystem®, which can be used to capture and measure the individual information in the patient's jaw area to produce functional and aesthetic dentures.

A strategic partnership with Tornos

To achieve the high standards required for the production of complex dental components, Zirkonzahn relies on Tornos. With a fleet of 27 Tornos machines, including almost the entire EvoDECO range, the company is able to produce customized parts in large quantities with impeccable quality.



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“Our first machines, such as the DECO 13, are still in daily use after more than 15 years. This is a testament to their reliability.”

“The EvoDECO is a machine that has transformed our production capacity, particularly for the most challenging parts,” said Andreas Kirchler.

With its 10 axes and ability to work with multiple tools simultaneously, the EvoDECO is ideal for machining highly complex dental components. Its versatility allows Zirkonzahn to reduce cycle times while ensuring consistent quality, which is crucial for critical applications such as dental implants.

“It excels at multi-process operations such as turning, milling and drilling with high precision,” the technician added.

Andreas Kirchler also highlighted the longevity of the machines.

“Our first machines, such as the DECO 13, are still in daily use after more than 15 years. This is a testament to their reliability,” he said.

With a renewed focus on innovation, Zirkozahn is exploring new ways to meet the changing needs of its customers. Its collaboration with Tornos continues.

Regionally rooted excellence

With around 350 employees working mainly at several sites in the Puster Valley, Zirkozahn remains firmly rooted in South Tyrol. This decision, motivated by the proximity to a local ecosystem of training and technical skills, enables the company to ensure exceptional production quality.

“Our region is a driving force for innovation,” Steger emphasized, “and we are proud of the fact that we have the best skilled workers in South Tyrol. We

benefit from highly qualified employees, which is crucial to maintaining our commitment to perfection.”

Education as a strategic pillar

Zirkozahn provides far more than technical solutions. The company has also invested in training with its worldwide network of training centers. These centers offer customized courses on CAD/CAM systems, milling techniques, and the advanced use of dental materials such as zirconia.

“Educating our customers is essential to ensuring their success,” Steger explained. The training not only enables them to master the tools, but also to innovate and push the boundaries of modern dentistry.



A mission: to change dentistry

Zirkonzahn embodies a vision in which tradition and technology are intertwined to push the boundaries of modern dentistry. With its unwavering commitment

to quality, innovation and customer service, the company is positioning itself as an indispensable partner for dental laboratories around the world.

Although Zirkonzahn's heart beats in South Tyrol, its commitment extends beyond its borders. The company is always active in providing technical and logistical support to its customers around the world. Its international team guarantees fast deliveries and personalized support so that dental laboratories can operate without interruption.

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Currently composed of eight employees, the LX Precision Portugal team aims to double its workforce in 2025, the year marking the large-scale start of production.

LX PRECISION PORTUGAL: a strategic presence *in Europe*

Since its creation in 2001 in Shanghai, LX Precision has established itself as a key player in the production of high-precision components for demanding sectors such as medical, automotive and telecommunications. Founded by Swiss entrepreneurs Dominique Lauener and Nicolas Musy, the company benefits from a Swiss heritage that combines quality, tradition and innovation. LX Precision Portugal, the group's European subsidiary, perpetuates this vision by combining technical know-how and industrial excellence.



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lxprecision.com

The LX Precision Group has its roots in the Lauener company, founded in Switzerland in 1905. This long tradition of high-precision machining for the watch-making, connector and medical sectors has made LX Precision a world leader. In 2001, the company was established in Shanghai as Lauener China Co, Ltd, before becoming LX Precision Shanghai in 2008. These Swiss origins give the group direct access to the most advanced tools, programming and processing technologies, as well as state-of-the-art training and human resources. Thanks to this unique combination of Swiss quality and global innovation, LX Precision provides its customers with high-precision components of unrivaled quality.



In 2023, the Swiss founders decided to extend their success by setting up a European subsidiary in Castelo de Paiva, Portugal. Currently employing eight people, the team aims to double its workforce this year, when full-scale production will begin.

A milestone achieved

Between the time this report was produced and the publication of this article, LX Precision Portugal achieved ISO 13485 certification. This achievement marks a milestone for the company, which was able to officially launch production of its medical devices—further proof of LX Precision Portugal’s commitment and rigor in serving its customers.

To support this growth, LX Precision Portugal is also planning a significant expansion of its infrastructure, as Lauener explained.

“You can see it today: we are in a building that is relatively small. In 2026, an extension is already planned right next to this building,” he said. “We’ll be renting between 1,000 and 2,000 m² of production space—this has yet to be defined. This will enable us to grow and take the company to a level, such as the one we also have on the Shanghai side.”

A small team united for a big goal

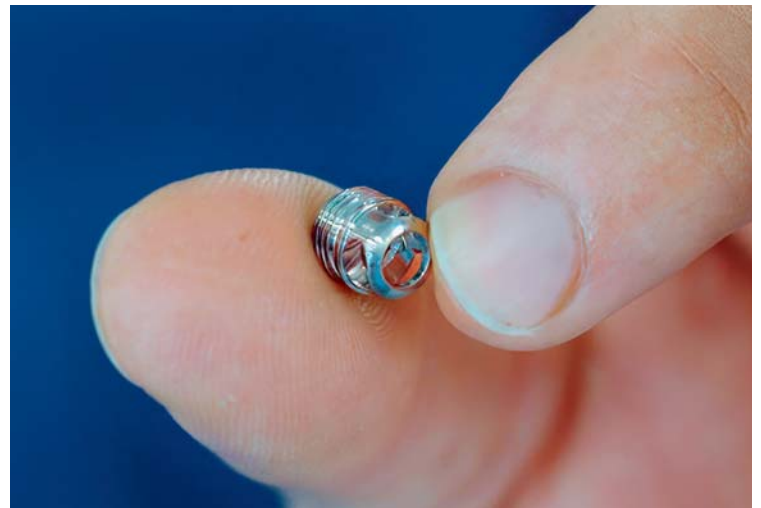
At LX Precision Portugal, the small, close-knit team forms the heart of the project. Working in a friendly, family atmosphere, each member is fully committed to the success of this new subsidiary. The team’s closeness and daily involvement bear witness to a shared determination to get this company off the ground and make it a benchmark in Europe.

“We’re all pulling in the same direction, sharing the same vision and the same goals,” confided Production Manager Ruryk Fausto. This team spirit is an essential driving force in overcoming the challenges of process implementation, ongoing training and production start-up.

Strategic collaboration with Tornos

A long-standing partner of LX Precision since the Lauener era, Tornos played a decisive role in the choice of machines for the Portuguese subsidiary. LX Precision's Shanghai, China, plant already operates many Tornos machines, providing the group with a wealth of experience and know-how. This fruitful collaboration and the well-honed processes were key factors in the decision to choose Tornos for Portugal, enabling the duplication of proven practices and ensuring technological continuity.

Tornos' DECO 10 Plus and DECO 13 machines are at the heart of LX Precision Portugal's success. Four of these machines are currently in operation at the Portuguese plant, boosting local production capacity. Designed to meet the demanding needs of the medical sector, they combine precision, productivity and flexibility. Adapted to the machining of complex parts, they guarantee optimum results, even for small production runs.



DECO 10 Plus in detail

Tornos' DECO 10 Plus stands out for its unique modular design, allowing the addition of equipment such as turning tool holders, polygon tools and thread-whirling systems. This flexibility makes it ideal for a wide variety of complex applications. Equipped with intuitive TB-DECO software, it simplifies programming while optimizing cycle times. With its advanced FANUC 31i-B5 numerical control, it offers exceptional precision and stability to meet the most demanding requirements. What's more, its Active Chip Breaker (ACB) chip management system ensures smooth production by efficiently eliminating waste, while maintaining high quality standards. Finally, the DECO 10 Plus embodies the spirit of Industry 4.0 by offering full compatibility with connected technologies, guaranteeing maximum productivity for advanced machining operations.



Thanks to this state-of-the-art equipment, LX Precision Portugal meets the technical challenges of medical devices, such as bone screws and hip prosthesis components, while ensuring precise tolerances and high-quality finishes.

High-precision medical parts

At the heart of LX Precision Portugal's production lies the manufacture of complex medical devices, such as bone screws, locking heads or components for hip prostheses. These parts present considerable technical challenges due to extremely tight tolerances and high finishing requirements.

For example, a bone screw manufactured by LX Precision Portugal must be accurate to within 5 microns, an essential constraint to ensure its perfect integration into critical surgical devices.



"We manage to maintain this precision with stability for hours on end, and with very little human intervention," bar turner Carlos Bessa explained. "This is made possible by the advanced design of the DECO machines, which enable us to execute complex machining strategies, such as the production of oscillating and hexagonal surfaces, directly on the machine."

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Another flagship part produced by the company is a component for a hip prosthesis.

"This part requires three delicate holes to be drilled, as well as 2.5 mm punching, all with very high roughness requirements, particularly on the inside of the part," Bessa pointed out. "Although it seems simple at first sight, its complexity lies in the tolerances and surface finishes required, which demand precise control and high-performance equipment."

These achievements demonstrate LX Precision Portugal's ability to combine technical know-how and state-of-the-art equipment to meet the specific challenges of the medical sector.

ISO certification, a strategic priority

At the same time, LX Precision Portugal is investing in ISO 13485 certification, essential for producing medical devices that comply with international standards. This rigorous process, inspired by the Shanghai experience, includes in-depth audits and customer validations. Once obtained,* this certification will pave the way for mass production, enabling the company to meet growing demand in the European and American markets.

With a clear vision and ambitious goals, LX Precision Portugal continues to combine Swiss excellence with European innovation. Thanks to its Swiss roots and its strategic partnership with Tornos, the company is ready to write the next page in its history, while consolidating its role as world leader in the production of medical devices.

lxprecision.com

* See boxed section on page 42



The new fixed tool holders allow the integration of up to 27 tools, offering unprecedented configurations to meet the most complex needs.

SWISSNANO 10:

a revolution

in micropart machining

The Tornos SwissNano 10 stands out as the most compact six-axis, bar-turning machine for machining high-precision microparts up to 10 mm in diameter. Designed for the most demanding applications, it excels in both precision and versatility. With its new fixed tool holders, modular options and ergonomic advances, it redefines the standards for machining productivity and flexibility.

TORNOS

Tornos SA
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CH-2740 Moutier
Switzerland
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By incorporating cutting-edge technological innovations, this machine offers unprecedented performance for both small production runs and mass production, while ensuring optimum reliability.

Optimized tooling

The new fixed tool holders can accommodate up to 27 tools, offering unprecedented configurations to meet the most complex requirements. Major innovations include:

- *Fixed tool holders with no front supports, reducing space requirements and facilitating changeover*
- *Compatibility with rotating tools, enabling simultaneous operations such as roughing and finishing*
- *Increased capacity to work parts with bores up to 15 mm—or even 20 mm—deep*

These new tools are also equipped with a quick-change system, enabling record setup times.

Rotating tools S11 to S31

A motor can be added under the counter-spindle to drive up to three rotating tools, with a maximum speed of 18,000 rpm (S31). These quick-change tools offer exceptional efficiency and open up new machining possibilities.

Extended back-operations

Until now, counter-operations were limited to four positions on the SwissNano. Now, this capacity can be doubled with up to eight optional tools, including four motorized positions. The configuration remains modular to adapt to the needs of the part, allowing, for example, the addition of a cutter per generation.

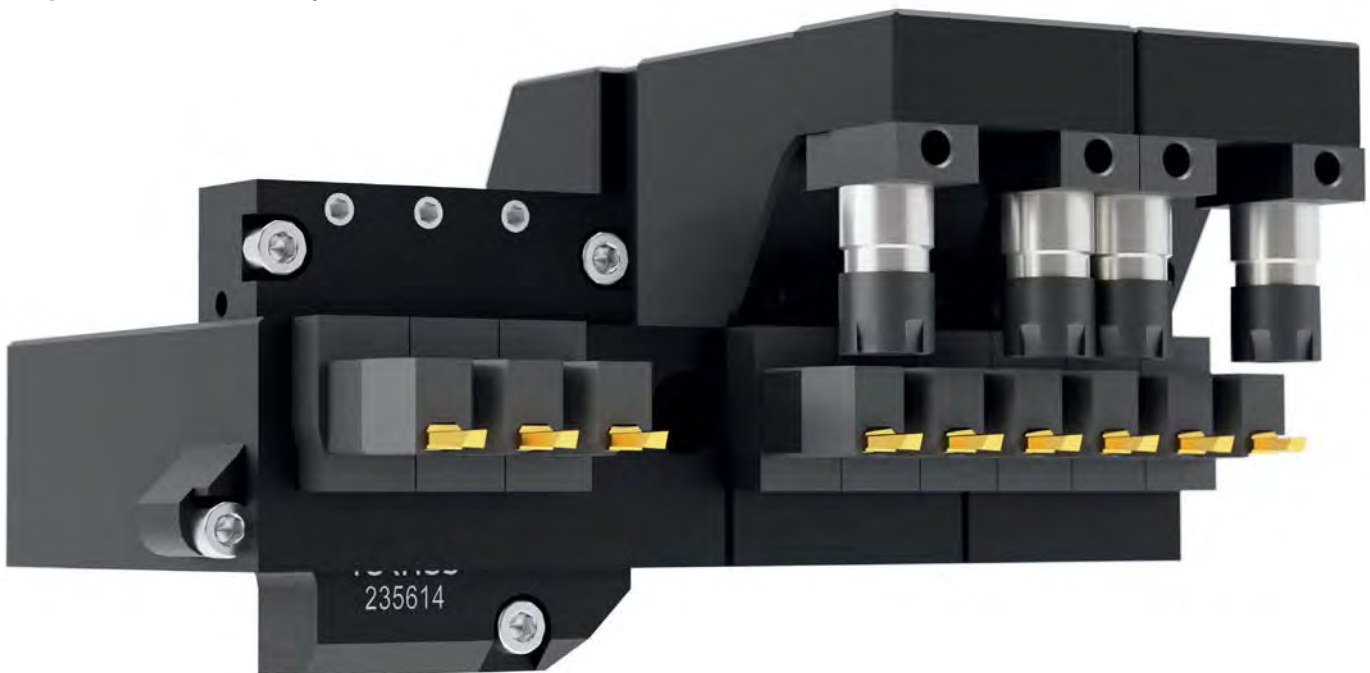
Increased efficiency

The SwissNano guarantees rapid warm-up (just 10 minutes) and optimized energy consumption (0.7 kW/h) for demanding machining cycles, such as the production of titanium dental implants. This performance, combined with exemplary ergonomics, means that 10 tools can be changed and production restarted in just three minutes.



Advanced ergonomics and intelligent interfaces

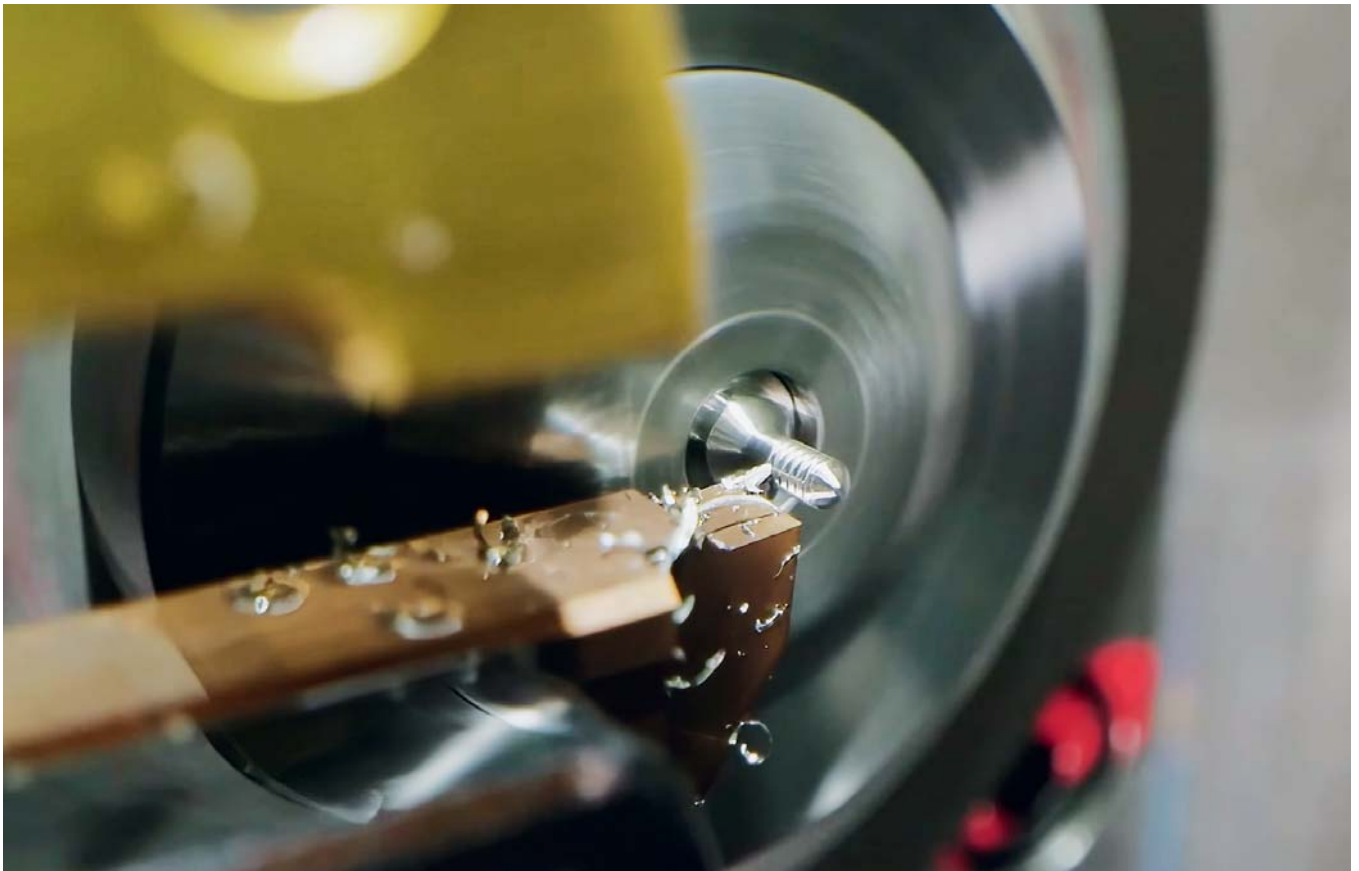
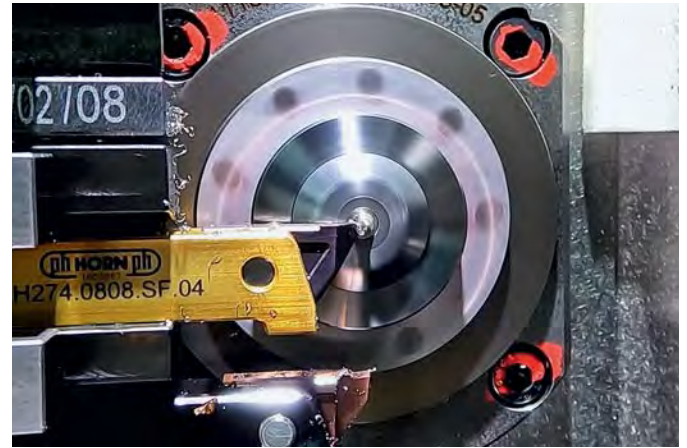
The SwissNano's front ergonomics offer 180-degree access around the machine, enabling the operator to easily make precise adjustments while directly facing the guide bush. This design guarantees fast, intuitive handling.



The machine is equipped with the Tornos Machine Interface (TMI), simplifying the management of production data and accessories. And with TISIS software, programming becomes intuitive thanks to a Gantt chart presentation. This software also enables motor temperatures and production status to be monitored directly from a smartphone.

Connectivity and innovation for secure production

The SwissNano 10 uses the Open Platform Communications Unified Architecture (OPC UA) protocol to facilitate communication with other systems. It can also be equipped with the Active Chip Breaker Plus (ACB Plus) option, which efficiently manages chips, guaranteeing safe production without the need for a costly, energy-intensive, high-pressure pump.



Technical features of the SwissNano 10

The SwissNano 10 offers unrivaled versatility and extreme precision, meeting users' expectations for the most demanding applications:

- **Maximum bar diameter:** 10 mm
- **Maximum part length:** 100 mm
- **Maximum number of tools:** 20, including 5 rotating tools
- **Main spindle speed:** up to 15,000 rpm
- **Energy consumption:** 6 kVA, significantly lower than other machines on the market
- **Thermal stability:** Tolerance of ± 0.001 mm assured, even under demanding conditions

An economic and ecological advantage

With reduced energy consumption, less expensive standardized tools and a smaller footprint, the SwissNano is ideal for workshops that demand performance and durability. It also doubles productivity per square meter while reducing energy and raw material costs.

Contact your Tornos representative to find out more about the SwissNano 10 and its innovative options.

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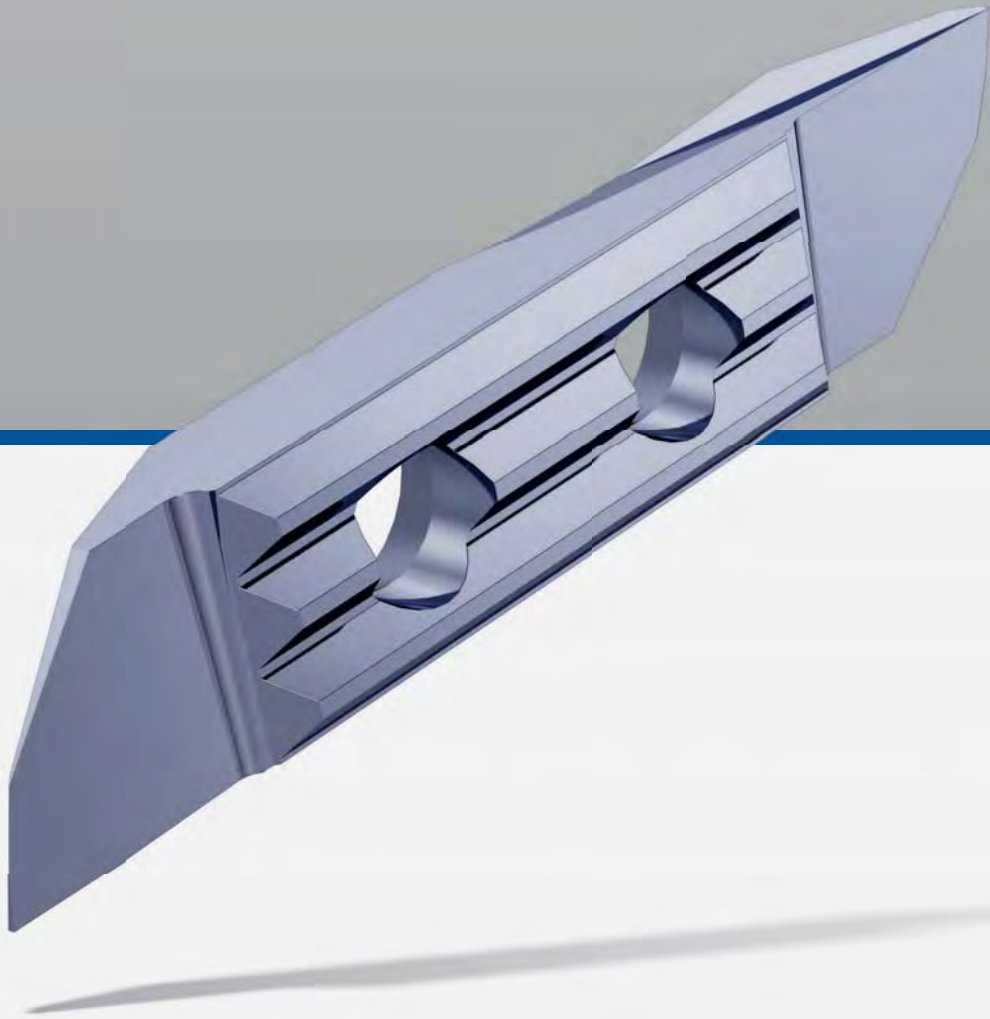
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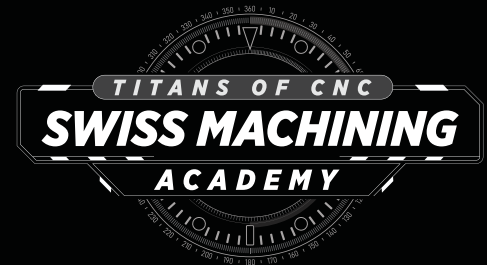
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