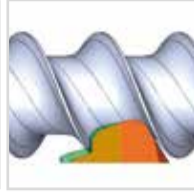


NEWS.

THE SCHWANOG NEWS FOR CUSTOMERS,
EMPLOYEES, AND FRIENDS OF THE COMPANY.

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Our design software allows to significantly expand the
helix angle range on your whirling head ...



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Cutting widths up to 16 mm at a holder height of
20 mm and higher can now be achieved with our
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Schwanog serration tool for maximum part precision:

**NICOLAI BICYCLES –
MADE IN GERMANY!**

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EDITORIAL:

Dear business partner,

Look forward to our new, hot-off-the-press edition of Schwanog News, informing you about technological highlights and further developments of our tooling systems.

For example, on page 3 of this news, where we are pushing the limits in medical applications with the significant expansion of the helix angle range on the whirling head. For the OD grooving application, we expanded the WEP system cutting width range to 16 mm which also solves important customer requirements in an innovative way.

We would especially like to draw your attention to our cover story and the detailed project report on page 2. NICOLAI Bicycles prove to score points, in the highly competitive mountain bike market, with highly productive manufacturing and the highest quality Made in Germany.

We are excited that finally we were able to participate in the first trade shows, which were a success as we were able to engage in many personal dialogues with customers and interested parties. You can find more information about these trade shows on page 4 of our news.

We wish you a successful business development and we are looking forward to each of your projects!


Clemens Güntert
Managing director

NICOLAI Bicycles benefits from Schwanog serration tool:

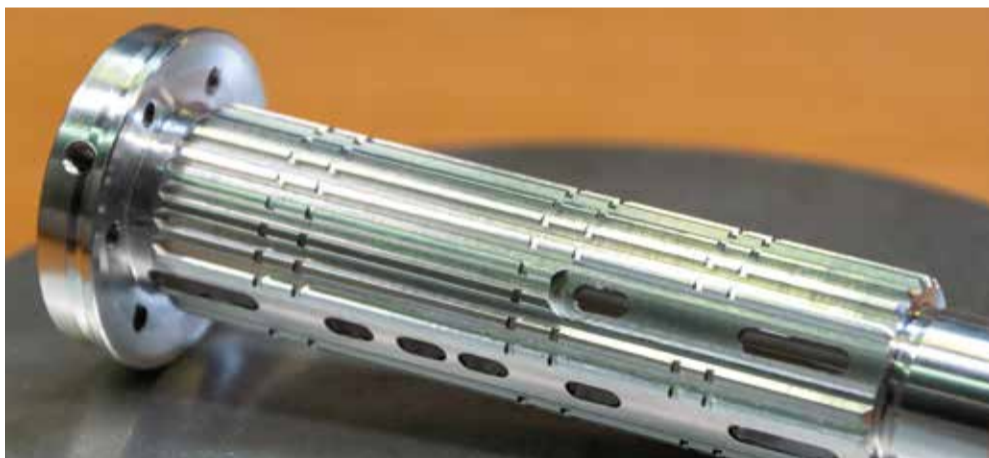
HIGHEST PART PRECISION AND PRODUCTIVITY – MADE IN GERMANY!

The company NICOLAI Bicycles is an extraordinary and fascinating manufacturer of mountain bikes and gravel bikes based in the quiet small town of Mehle. More than 20 years ago, Karlheinz Nicolai made his dream come true and started his own mountain bike company, NICOLAI, together with two welders in a garage.



Against all market trends, Karlheinz Nicolai implemented his vision of high-end bikes, whose frames are completely handcrafted in-house: from development to milling, welding, straightening, heat treatment, and coating. With attention to detail, high craftsmanship, welding skills, the experience of passionate bikers, and an extra portion of love some of the best bike frames in the world are built here, down to the smallest individual part.

Owner Karlheinz Nicolai does not consider this as an end, but the enormous advantage of being able to integrate the results of driving tests into new bikes very quickly and to be able to adapt perfectly to the needs of his customers. Keeping to the company motto "100% Made in Germany", this ensures that all components meet the high standards. Materials such as aluminum in special alloys, steel and stainless steel are used.



Drive shaft, machined with Schwanog serration tool

All details and advantages are displayed on the website www.nicolai-bicycles.com and, of course, the coveted bikes can be configured.

Today, with a team of around 30 employees, NICOLAI produces high-end bikes that are continually integrating new impulses for innovations through direct feedback from customers and athletes.

Commitment to the highest standards

With his commitment to the highest quality down to the last detail, project manager Stephan Wickenhäuser, CNC production and head of engineering, turned to Schwanog to manufacture an aluminum drive shaft even more efficiently.

Klaus Rosenfeld, technical sales representative who is responsible for the customer NICOLAI, analyzed the existing manufacturing processes and recommended with a broaching tool for the serrations an alternative, which promised even higher process reliability and productivity. With the Schwanog broaching tool, serrations and keyways can be produced on CNC lathes in one operation. This method was used on the first prototypes and immediately won over project manager Stephan Wickenhäuser.



Project Manager, Stephan Wickenhäuser (left) and Operation Manager, Markus Schmidt, NICOLAI

"The manufacturing of serrations has not been part of our internal production processes before. Schwanog managed to implement the specifications of our development department on the prototypes perfectly and professionally with its serration tool. We were completely enthusiastic about that!"

Stephan Wickenhäuser, Project Manager NICOLAI-Bicycles

Four central advantages how NICOLAI benefits:

- Economical complete manufacturing of small series in a single operation
- Quick and easy tool changeovers
- Highest process reliability due to elimination of the post-processing step
- Significant reduction of set-up costs

The decisive production edge results from complete machining in one pass, whereas conventional turned part production requires an additional, separate step on a post processing machine.

10 years of sales work for Schwanog in Poland:

LUKAS KUCINSKI CELEBRATES HIS 10TH ANNIVERSARY.

In the middle of 2011, Mr. Kucinski started working as a technical sales representative at Schwanog with the aim of conquering the Polish market for Schwanog. And that was a real success, because he was able to sustainably increase sales in Poland year after year.

Mr. Kucinski accomplished that due to his tireless work and his qualifications. After completing his apprenticeship as an industrial mechanic, specializing in machines and systems technology, he was able to gain extensive experience as an operator for multi-spindle automatic lathes. These experiences on the customer's side are still important today to meet customer needs.

Lukas Kucinski enjoys working with the Schwanog team and appreciates the great support and pleasant collaboration over the years.

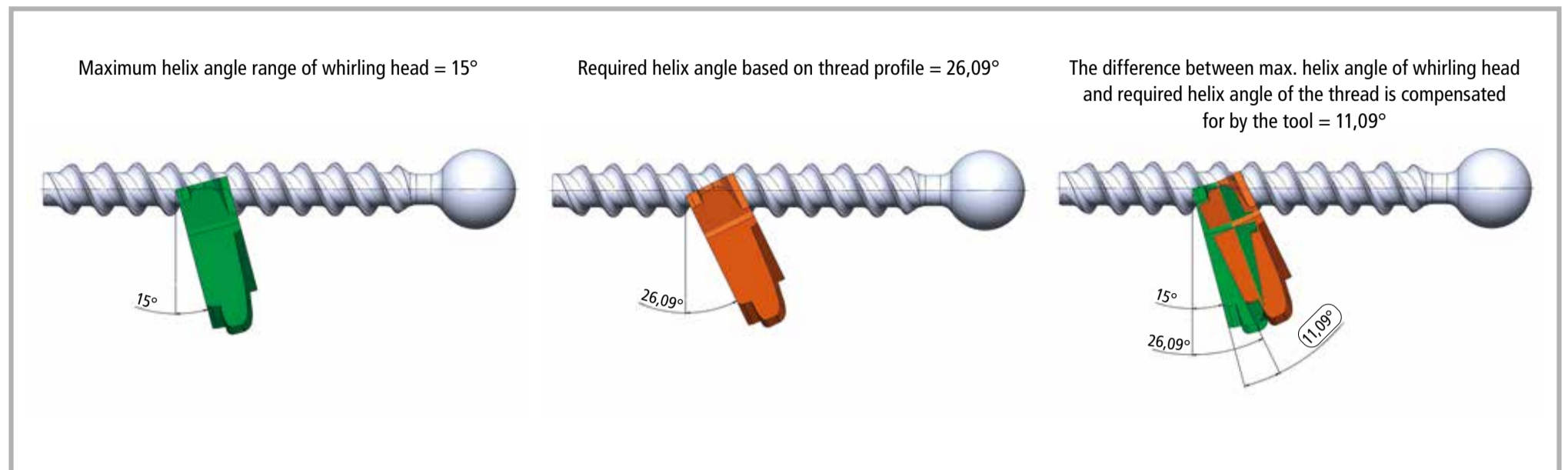
Lukas Kucinski is married and a happy father of two children. He likes to spend his free time with his family - traveling and fishing in Masuria which are his true passions.

On his 10th company anniversary, we warmly congratulate Lukas Kucinski on behalf of the entire Schwanog team and look forward to continuing our successful cooperation with him.



Manufacturing of threads, when the helix angle range of the whirling head is not sufficient.

THE CLEVER SCHWANOG SOLUTION IS A CORRECTION OF THE GEOMETRY!



In recent years the market segment for bone screws and implants has developed very dynamically and innovatively, especially in the manufacture of threads. Multi-start threads are taking on increasing significance and at the same time represent a major challenge.

The reason is that our customers, time and again, are confronted with the problem that the helix angle range of the whirling head is limited, for example, to $\pm 15^\circ$. This helix angle should, however, match the helix angle of the thread to establish the profile on the part with as little distortion as possible.

Helix angle > 15° – what now?

The production of multi-start threads sometimes requires very large helix angles, which are often more than 20°. So, what can be done if the limited helix angle range on the whirling head simultaneously means that such threads can no longer be made with conventional whirling heads?

Schwanog has the solution!

Our team has taken on this complex task and developed a solution that pushes technological limits and opens completely new perspectives.

With the use of design software, we can calculate the required helix angle and thus being able to compensate for the missing setting range. Therefore, even helix angles of > 15° are possible.

Another advantage is that during the design process we already can detect minimal deviations in advance and can coordinate these with you.

Look forward to completely new possibilities for your manufacturing of bone screws and implants.

Your advantages:

- Technological solution for helix angles of > 15°
- Use of innovative design software
- The required angle is compensated in the Schwanog tool
- Minor deviations can be discussed in advance

Go-live started as planned in September 2021:

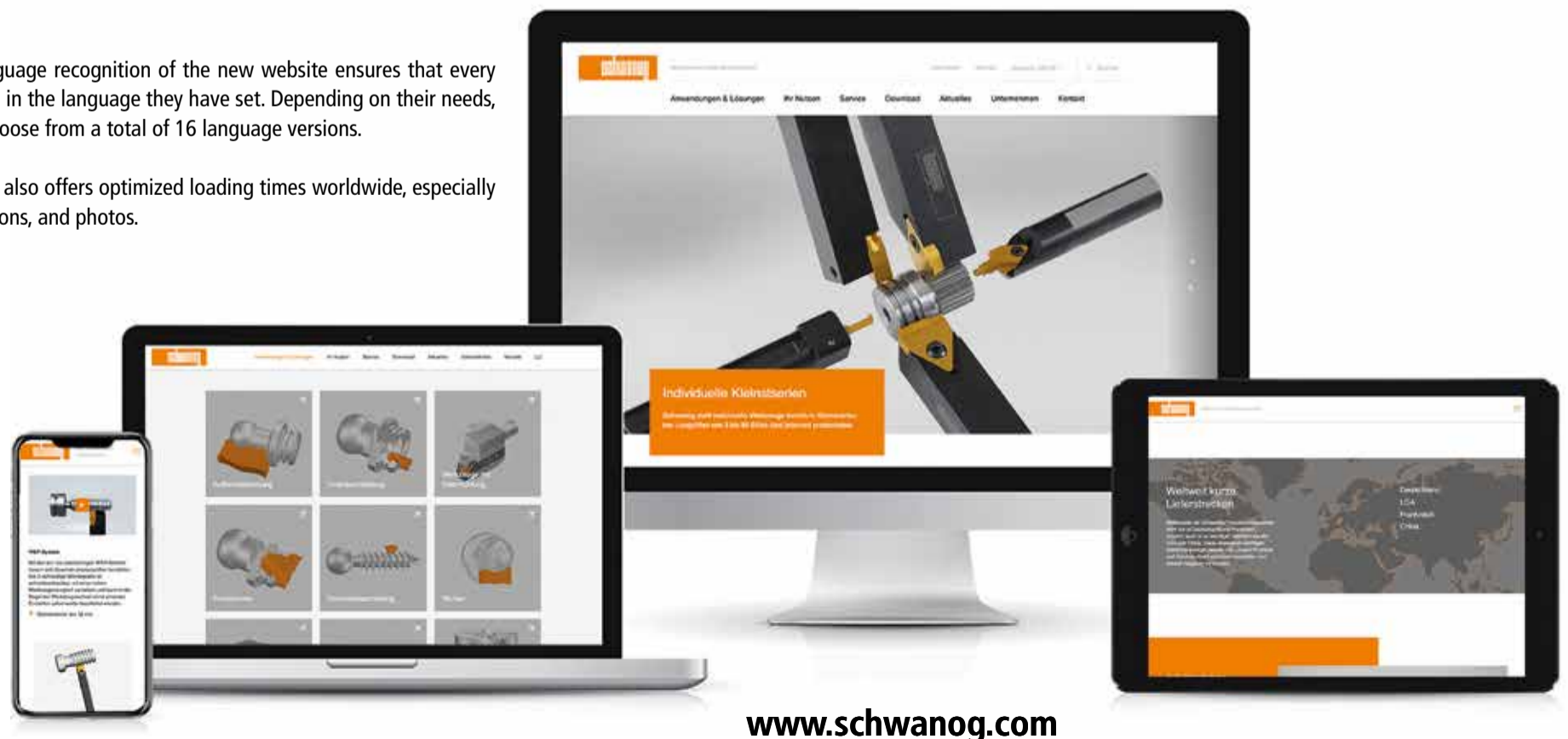
THE NEW SCHWANOG WEBSITE!

After intensive preparatory work, the new Schwanog website went online at the beginning of September. The new website marks the start of our digital marketing campaign, which informs our global customers and interested parties faster, more efficiently, and more sustainably.

The browser language recognition of the new website ensures that every user is addressed in the language they have set. Depending on their needs, users can also choose from a total of 16 language versions.

The new website also offers optimized loading times worldwide, especially for films, animations, and photos.

Enjoy an internet presence with a new web design, the most modern web architecture and clear user interface for products, applications, and news.



Targeted expansion of WEP applications:

INDEXABLE WEP INSERT, NOW AVAILABLE FOR CUTTING WIDTHS UP TO 16 MM!



The consistent focus on the requirements of our customers and the market is one of the secrets to our success, which inspire what we do every day. Best example is the expansion of our successful WEP system, due to enormous cost pressure on our customers and the continuously increasing requirements.

By targeted expansion of the OD grooving application of the 3-cutting edge WEP system, it is now possible to achieve cutting widths of up to 16 mm with a holder height of 20 mm and higher.

In addition to the previous clamping screw, the new clamping claw offers optimized stabilization to absorb the high cutting pressures. Moreover, all tool holders for the larger insert widths are supplied with internal coolant supply and optional connection options.

Contact us – we will be glad to be at your service!

Advantages:

- Unit cost reduction through expanded insert width of the WEP system
- Increased stability by combination of clamping screw and clamping claw
- More variable applications due to new tool holder heights of 20 mm and higher
- All tool holders with internal coolant and optional connection options

We finally have trade shows again with face-to-face contact:

THE SPIRIT OF DIALOGUE - TRADE SHOWS IN THE USA AND FRANCE



It's finally time for trade shows again - with great anticipation, our teams travelled after a long break to the first trade shows in the USA, France, and Germany to be able to welcome customers and interested parties personally at our booths.

As a very positive result, we received an increased level of orders from our customers at all trade shows and have noticed an enormous demand for our solutions.



More sales power for Schwanog China:

MICHAEL QIAO REINFORCES THE SALES FORCE!

We are very pleased that we have been able to win Michael Qiao as a new, experienced employee for our Schwanog China sales team.

Mr. Michael Qiao is 34 years old and previously worked as a production engineer in the automotive supplier industry for 11 years. In this field he was responsible for the area of process optimization for multi-spindle automatic lathes. Michael Qiao was able to enhance his application know-

how by taking part in several training courses in the USA and Germany, including training on Schutte multi-spindle automatic lathes.

In his previous job he has used Schwanog tools daily for many years and is very familiar with both the requirements and solutions. With the switch to Schwanog as a manufacturer, he can now pass on his knowledge with great conviction and recommend the highly productive Schwanog solutions to his customers. He will primarily advise

customers in Shanghai's economic belt and has been trained and prepared for this task profoundly. Michael Qiao is married and has a daughter. He likes to spend his free time climbing and hiking in the great outdoors.

We wish him every success in his new role.



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