

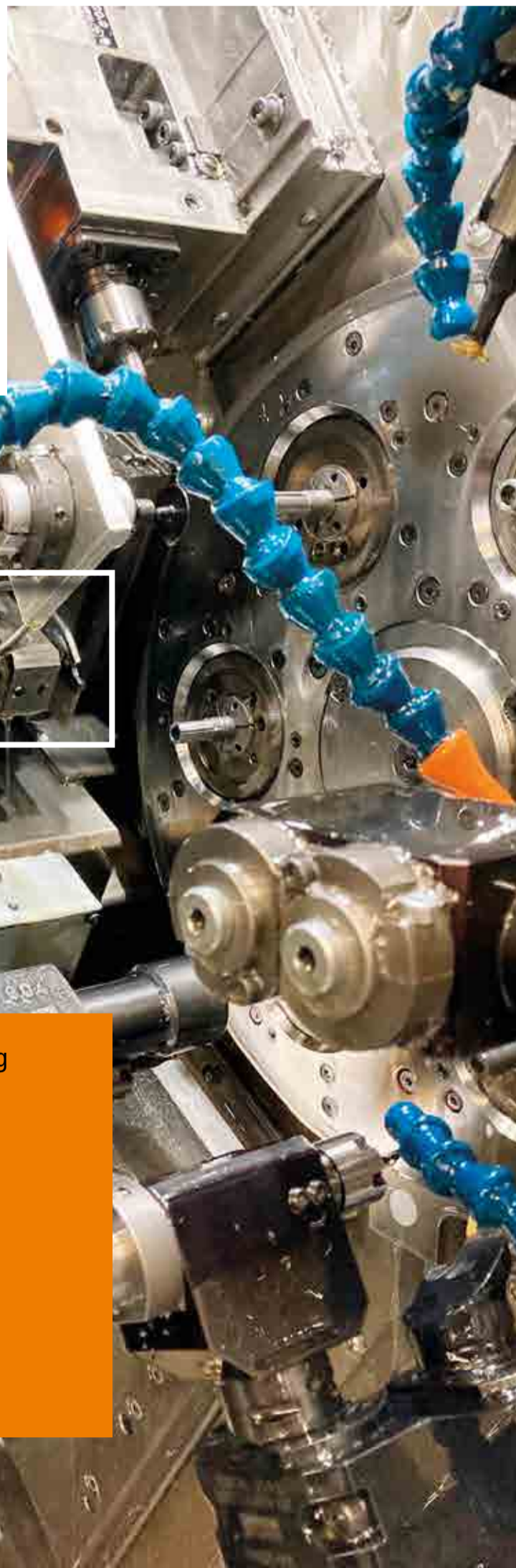
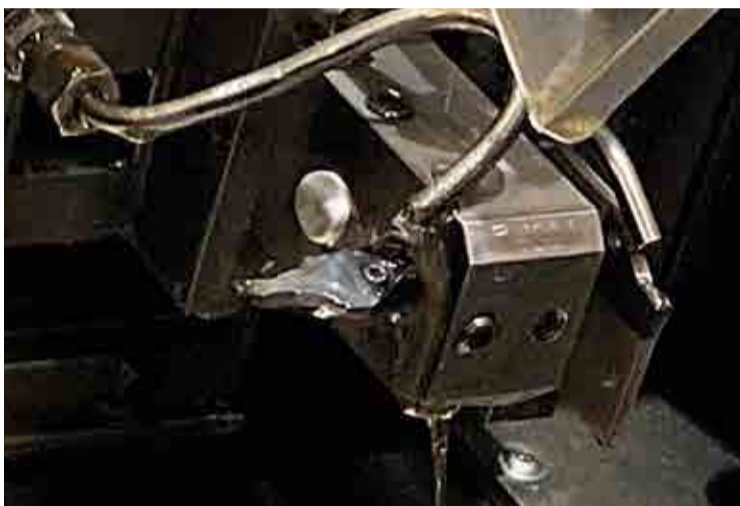
NEWS.

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

PAGE 02 Uldrian Maschinenbau relies on Schwanog solutions in both of their areas of competence!
The Uldrian company has been active on the market for about 3 decades and is THE specialist for ...



PAGE 03 Schwanog introduces its system of improvement proposals!
In order to promote the continuous improvement in our company and ...



EDITORIAL:

Dear business partner,

with our fourth edition of Schwanog News, we present you with interesting reports, exciting product presentations and the latest news from our subsidiaries around the world.

The cover story draws your attention to the enormous cost advantages using Schwanog form drills which you can find on Page 3.

Our customer report on page 2 portrays the long-standing partnership with our customer Uldrian. In both areas, of mechanical engineering and contract manufacturing, Uldrian relies on Schwanog solutions, Schwanog's short response times, and the first-class technical support.

This year, we have also launched our improvement proposal system and have already been able to benefit from ideas provided by our employees. More on this in our story on page 3.

On page 4 we report from the USA on Richard Bishop's 10th year anniversary with Schwanog and his concurrent farewell. Richard, a "real techie" who now begins his well-deserved retirement. Not only we at Schwanog, but also his esteemed customers will surely miss him. Joseph Amstadt our production manager in the USA as well celebrates almost simultaneously his 10th anniversary with Schwanog. And back at our headquarters, also Marco Formella looks back on 10 years with Schwanog and makes us proud to work with such a motivated team.

Finally, on behalf of the entire Schwanog team, I wish you a Merry Christmas and a successful start in 2021!

Clemens Güntert
Managing director

Achieving highest efficiency with Schwanog form drills:

**DEPENDING ON THE APPLICATION:
INSERTABLE DRILLS OR
SOLID CARBIDE DRILLS**

PAGE 03

Manufacture of special machines and machining of cold-formed blanks:

ULDRIAN MASCHINENBAU RELIES ON SCHWANOG SOLUTIONS IN BOTH OF THEIR AREA OF COMPETENCE!



The Uldrian company has been active on the market for about 3 decades. Uldrian is a specialist in the production of special machines for the complete production of high batch quantities of turned parts from rod/coil material; additionally, they manufacture special machines for the machining of cold-formed blanks. The company was founded and built-up by Mr. Michael Uldrian.

From the very beginning, investments were made in the company's own machine park. As a result of this, customers can manufacture and develop their first-sample series parts, pre-series parts and new parts processes directly at Uldrian. Once the process has been successfully established, the customer can purchase a machine system with the certainty of perfect integration, and then generate added value under their own management. As an alternative option, customers can, if necessary, purchase the parts via Uldrian's subcontracting services.

The two business divisions, mechanical engineering and contract services, are strategically closely linked and technical developments can thus be mutually integrated. This allows for a continuous improvement of the special machines as well as a targeted expansion of the application possibilities.

Mr. Klaus Weis currently manages the company. He accompanies the technical specialists around Mr. Michael Uldrian, Mr. Hans Kübler and Mr. Aribert Wurzinger, the engineering team around Mr. Frank Fährmann, and of course the teams around the application engineers Mr. Janusz Kalinowski and Mr. Lars Obreiter.



The Schwanog portfolio gives Uldrian effective and economical production possibilities
The special machines from Uldrian are designed with an 8-fold clamping and feeding through process so that with each machining cycle a part can always be clamped and subsequently machined.

What Uldrian appreciates about the cooperation with Schwanog is the simple and pragmatic coordination with Schwanog's application technology. This makes it possible for Uldrian to respond and deliver at short notice. The physical proximity and the short distances to Schwanog territory manager Mr. Andreas Bornbaum offer Uldrian a fast reaction relating to new part processes.

The Schwanog tooling systems provides Uldrian with:

- Machining of complete contours with a single tool, eliminating 3 standard tools
- Precise parts and safe, reliable processes
- Safe and fast tool changeover through the insertable tooling system
- Effective and economical manufacturing method

Right from the beginning a "genuine Schwanog":

MARCO FORMELLA CELEBRATES HIS 10 YEAR ANNIVERSARY!

Marco Formella is one of the employees who have been working for Schwanog since their apprenticeship and proudly celebrates 10 years with the company.

Marco Formella started his training as a machining mechanic at Schwanog in 2010. After successfully completing his apprenticeship, he initially worked for more than a year at a STAMA milling turning center. This was followed by more than five years of work as a tool grinder on Haas grinding machines.

The core of Schwanog's manufacturing strategy is the continuous investment in the latest technologies such as robot-supported machining

centers. This also benefited Marco Formella, who, with his talent and top skills, decided that the next step was to attain a degree as a certified mechanical technician. Marco also passed this exam with flying colors.

Since 2019, Marco Formella has been responsible for optimizing production processes as a technician and performs this task perfectly with his knowledge and positive attitude.

Managing Director Clemens Güntert congratulated Marco Formella on behalf of the entire workforce on his 10th anniversary and expressed the wish for a continuing long-term relationship.



Highest efficiency with Schwanog form drills:

DEPENDING ON THE APPLICATION, INSERTABLE OR SOLID CARBIDE DRILLS!

Form drilling is one of the most widely used applications in machining precision parts. Form drills with pre-defined diameters are offered from stock by various manufacturers and are still common.

However, a significantly higher productivity can be achieved with our form drills with drawing-specific form tools, which we have developed over many years, with continuously increasing success.

For the last four years, we have expanded our product range and added solid carbide drills at the request of numerous customers. Despite all their advantages, insertable form drills have certain technical limitations in terms of stability and precision from a given point onwards. With solid carbide drills in all common carbide grades and coatings, we now offer a perfect solution for every requirement.

Thereby, we remain true to our conviction and only produce solid carbide drills ground to diameter and form to customer specifications, for maximum productivity and precision.

The all-round carefree package from Schwanog

For our customers we offer support with an all-round carefree package as our technical sales department makes recommendations based on technical feasibility and draws on its extensive experience. They may propose an insertable form drill or a solid carbide drill, based on the application.

Our message:

Simply send us your part drawing and we will recommend the best solution in terms of economy, precision, and process safety!



Insertable form drills

When using insertable form drills, only the carbide insert is profiled. This ensures an efficient and extremely cost-saving solution. Drilling tolerances $\geq \pm 0.02$ mm can be achieved with inserts which are ground individually according to drawing. Schwanog insertable form drills can be used on all lathes and milling/drilling centers.

The facts:

- Part cost reduction by up to 40 %
- Drilling diameters up to 28 mm
- Repeatability: < 0.02 mm
- Time savings, as separate adjustment is not required during tool changeover
- Significantly lower coating cost due to insertable tool
- Holder with coolant through
- Various carbide grades available



Form drilling with solid carbide drill

When the insertable form drill system reaches its limits in stability and accuracy, Schwanog solid carbide drills offer the perfect solution.

The Schwanog solid carbide drills are available in all common carbide grades and coatings. As with Schwanog insertable form drills, the profiles of the solid carbide drills are always ground according to drawing. All precision parameters can be reliably repeated and can be verified by state-of-the-art measuring machines.

The facts:

- Solid carbide drills are available in almost all desired versions, carbide grades and coatings
- All precision parameters can be reliably repeated
- With and without coolant through

Ideas of employees is a valuable resource:

SCHWANOG INTRODUCES ITS IMPROVEMENT SUGGESTION SCHEME.

In order to promote continuous improvement in our company and to use the ideas of our employees, we introduced an attractive improvement proposal system some time ago.

This gives our employees a neutral platform from which they can actively contribute their creative ideas. To evaluate the ideas, we have set up a panel of experts from different disciplines. The first step is to check whether the proposal submitted contains attractive substance and whether it offers Schwanog economic added value. Once a year, a prize is awarded for the best three improvement suggestions from all submitted ideas. These are selected by the Panel and the Executive Board based on predefined factors.

The following TOP 3 suggestions for improvement have been honored for the year 2020:

TOP 1: Production area wire-cutting

Subject: Pallet registration

Increase efficiency through a clearly defined allocation system of pallets during the wire-cutting process. The project is already in the implementation phase.

TOP 2: Manufacturing area Grinding

Subject: Fanuc Robot guard

Covers to prevent oil from entering the drive motors of Fanuc robots. A prototype has already been ordered; the idea is in the testing phase.

TOP 3: Human Resources

Subject: Introduction of workflows (holiday, flextime, time recording)

Digitalization of the processes for holiday and flextime requests, through a software which saves a considerable amount of time and money. The idea has already been successfully implemented.

Since the introduction of the improvement proposal scheme, several promising suggestions for improvement have already been received, some of which are currently in the implementation phase.

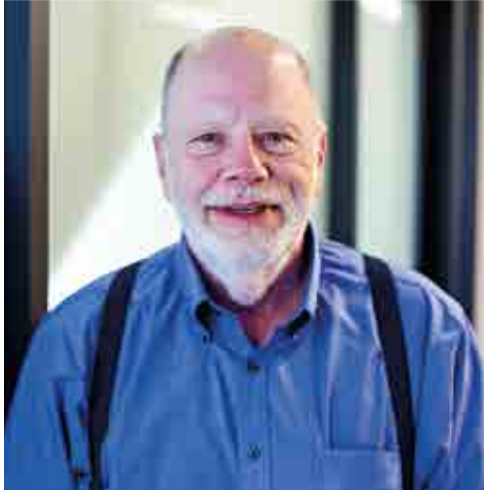
It is therefore worthwhile to actively contribute with innovative ideas.



Richard Bishop retires - Joseph Amstadt celebrates his 10-year anniversary:

SCHWANOG USA CELEBRATES TWO OUTSTANDING EMPLOYEES!

Richard Bishop



A seasoned industry expert, Richard Bishop, will begin his well-deserved retirement at the age of 67 on January 3, 2021 which concurrently also marks his 10-year anniversary with Schwanog.

Rich was able to put his extensive experience in machining technology to profitable use for Schwanog's customers during his years in the technical sales office. As a real technical expert

there was no better advisor. After his studies and training in machining technology, Rich worked as a toolmaker for over 8 years before switching to technical sales and finding his calling at Schwanog around 10 years ago. What Rich particularly appreciated about Schwanog was the varied work and the familiar relationships within the Schwanog team and with customers. Every day brought new challenges, new friendships, and offered the opportunity to successfully complete projects. That is why Rich enjoyed going to work every day. He was always open for a little fun and was appreciated by the whole team.

He looks back gratefully on his career and is now looking forward to the new life. He is going to use the time for his wood carving, watch-making hobbies, and to make long journeys with his wife.

On his 10th year anniversary, general manager, Holger Johannsen, and the whole Schwanog team offer their warmest congratulations and thank Rich for his excellent work, wish him a happy retirement and yes - we will most certainly miss him!

Joseph Amstadt



Joe began working for Schwanog 10 years ago at the age of 23. The first years of his experience was as a machine operator.

Thanks to his enthusiasm for high-tech machines and his ambition, Joe has matured into a valuable member on the Schwanog team.

Following several training stays at the German headquarter, we were able to appoint him as production manager in 2017. In this position Joseph obviously feels comfortable and master's everyday challenges successfully.

On his 10-year anniversary general manager, Holger Johannsen, and the entire Schwanog team congratulated Joseph.

Away from production routine, Joseph finds balance and relaxation in daily fishing, gardening, and the pleasures of cooking.

Relax and enjoy with family and friends:

MERRY CHRISTMAS AND A HAPPY NEW YEAR!

Merry Christmas and a Happy New Year!

In these turbulent times with daily global major headlines, Christmas is the ideal moment to unwind and gather strength so that 2021 will be full of energy and optimism.

The special thanks of all Schwanog employees goes out to you, because through your cooperation as partners we can look positively into the future with our team.

Take advantage of the forthcoming Christmas season for beautiful, contemplative hours with your family. For the new year 2021, we wish you health, success, and all the happiness in the world!

Your Schwanog Team



Schwanog · Siegfried Güntert GmbH
 Niedereschacher Str. 36 · D-78052 Villingen-Schwenningen
 Tel. +49 (0) 77 21 / 94 89-0 · Fax +49 (0) 77 21 / 94 89-99
 info@schwanog.com · www.schwanog.com

Schwanog LLC
 1301 Bowes Road, Suite A · Elgin, IL 60123
 Phone: 847-289-1055 · Fax: 847-289-1056
 info.usa@schwanog.com · www.schwanog.com