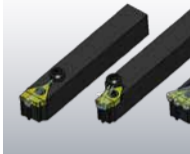


NEWS.

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

PAGE Tool holder with internal coolant supply!
When machining chip-intensive materials such as
03 42CrMo4 or aluminum, solutions are available that
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Cycling has become a trend sport and has all the
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promotes health ...



Schwanog Escomatic Tools:

IMPRESSIVE RESULTS OF A TOUGH PRACTICAL TEST AT HALLER-JAUCH!

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EDITORIAL:

Dear business partner,

Today we are providing you with the third issue of the Schwanog News.

I would like to draw your special attention to the practical test with our Escomatic tools on page 2, which we performed at our customer Haller-Jauch. Those of you who work with Escomatic machines will be delighted to read about the huge cost savings that have been confirmed in three different test scenarios.

For all of you, the technical discussion on page 3 will be of great interest; especially when machining chip-intensive materials such as 42CrMo4 or aluminum. Our toolholders with internal coolant supply offer a highly efficient solution.

Like many of our customers, we also used the time to press ahead with important process optimization projects. At the Schwanog production facility in Obereschach, the green light was given for the introduction of 5S methodology. Recently, the method was successfully introduced in the grinding center production area. Read more facts on page 4 of this news.

Also, on page 4 we portray our new employees at the Schwanog production sites in China and the USA. We hope that they will work with us successfully for a long time, just like logistics employee Mr. Bodemer, to whom we dedicated a story on his 10th anniversary on page 3.

We wish you, and all of us, an economic revival in the fourth quarter to end this year rather successfully.

Clemens Güntert
Managing director

The more difficult the material to be machined, the higher the savings in tool cost:

THE NEW SCHWANOG ESCOMATIC TOOLS IN A TOUGH PRACTICAL TEST AT HALLER-JAUCH!



from left to right Thomas Neumann Head of Quality Assurance Haller-Jauch GmbH, Andreas Hummel Production Manager Haller-Jauch GmbH, Ralph Storz Schwanog Sales Representative and Matthias Werner Managing Director Haller-Jauch GmbH

The Haller-Jauch company was founded more than 100 years ago and has gained an excellent reputation in the market as a specialist in the production of micro-turned parts and power springs. The 38 persons strong team around Managing Director, Matthias Werner, manufactures for customers in the medical, automotive, electrical engineering, and precision engineering sectors on more than 60 machines. The pillars of the company's values are characterized by the demand for highest quality, precision, and efficient processes.

In the area of the contract manufacturing of micro-turned parts, Haller-Jauch mainly uses Escomatic machines with the latest technology.

Ideal partner for the Schwanog practice test

With these prerequisites, Haller-Jauch is not only an ideal customer for Schwanog, but also offers perfect conditions for a comprehensive practical test with its production orientation towards Escomatic machines.

The aim of the tests on the Escomatic D2 machines was to prove the enormous tool cost savings

under different production conditions. For this purpose, three different turned parts in three different materials were machined with Schwanog insertable grooving tools. The D2 and D4 machines require the head to be converted to a hexagonal shaft - but this conversion is technically simple and requires only a little effort.

TEST 1: MICRO TURNED PART, MATERIAL 1.4021 X20 Cr13 (AISI/SAE 420)

In the first test series, a micro-turned part was machined on an Escomatic D2 using the difficult-to-machine material 1.4021 X20 Cr13. With a Schwanog tool life expectancy of 33,000 compa-

red to the solid carbide ESCO tool of 4,500, this test far exceeded the already high expectations.

In addition, the costs for regrinding the Schwanog insertable tool were eliminated, so that the tool cost savings in the practical test were a whopping 96.89%.

TEST 2: BUSHING, MATERIAL 9SMn28K (AISI/SAE 1215)

In the second series of tests, a bushing made of free cutting steel 9SMn28K was machined. Although the test series showed that the advantage is greatest for materials that are difficult to machine, this test also showed impressive advantages. Despite a lower tool life/tool of 270,636 pieces compared to 540,000 pieces when using a solid carbide ESCO tool resulted in an enormous advantage because regrinding costs were eliminated and consequently resulted in a tool cost reduction of 57.14 %.

TEST 3: MICRO-PRECISION PART, MATERIAL X5CrNiMo 1.4401 (AISI/SAE 316)

In the third series of tests, a micro-precision part was machined with the material X5CrNiMo 1.4401, a stainless austenitic chrome-nickel-molybdenum stainless steel. With this difficult-to-machine material, the tool cost savings again jumped to a peak value of around 88%. Once again, the quality of the Schwanog insertable tool was impressive, with a tool life of 83,000 per tool compared to 45,000 with the solid carbide ESCO steel.

Conversion of the hexagonal heads

After testing various conversions, Haller-Jauch

opted for the Ventura head because the Schwanog tool can still be adjusted from the outside, as with the solid carbide tool used so far. The usual process could thus be maintained.

The test series impressively shows the Schwanog grooving tools, on Escomatic machines, offer impressive advantages and convincing results with enormous tool cost reductions of often over 90%. In short: A head conversion is always worthwhile, because customers benefit from quality and productivity in a whole new dimension.

Wide range of Schwanog tools and holders for Escomatic machines

At the suggestion of numerous customers, Schwanog has further expanded its range in a targeted manner; opening a highly productive tooling solution for all Escomatic machines. In addition to the grooving tools, Schwanog also offers the appropriate holders for all machine types. From the cam-controlled machines D2, D4, and D6 to the new D2/D5 CNC and NM New Mach machines.

Interested customers can obtain advice from the Schwanog team via all communication channels – whether in person on site, email, telephone or video conferencing.



ESCOMATIC D2 machine

The advantages:

- ❑ Enormous reduction in tool costs
- ❑ Due to the highest change accuracy, separate adjustment during tool change is not necessary
- ❑ Substantial time savings during tool changeover
- ❑ Significantly lower downtime costs due to fewer tool changeovers
- ❑ Complete solutions for the entire line of ESCO machines

Schwanog managing director Clemens Güntert summarizes the test results as follows:

„The test series have in principle shown that one benefits considerably under all conditions.

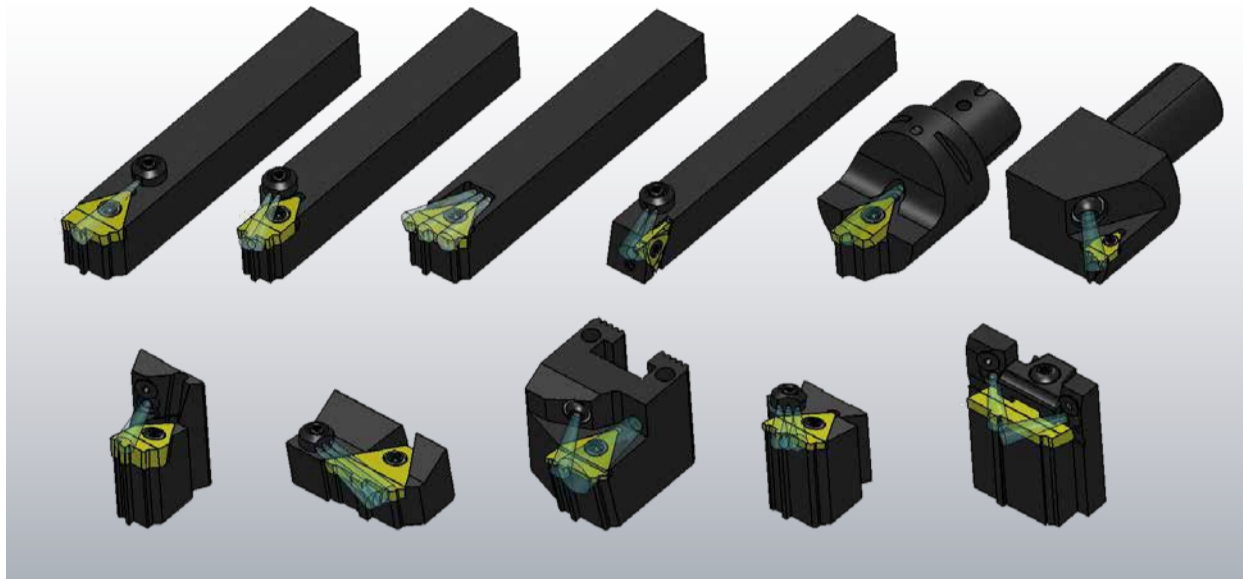
However, the following applies in particular: The more difficult the material to be machined, the higher the tool cost savings!“



ESCO machines Haller-Jauch GmbH

Optimized chip management and increased tool life:

SCHWANOG TOOLHOLDERS WITH INTERNAL COOLANT SUPPLY ARE AN HIGHLY EFFICIENT SOLUTION!



The Benefits:

- ❑ Chips are immediately flushed away from the part
- ❑ Due to the adjustable spray nozzles, chips have no chance
- ❑ Improved tool life due to optimum coolant supply
- ❑ Temperature build-up at the part is reduced by targeted supply of coolant, thus tool life is improved significantly
- ❑ Can be used with high-pressure coolant
- ❑ Chips are not getting caught on coolant lines

When machining chip-intensive materials such as 42CrMo4 (AISI/SAE 4140) or aluminum, solutions are required that offer a noticeable improvement in chip removal. Coolant lines which can be altered during tool changeovers are still frequently used. Or one struggles with chips that wrap around coolant lines.

Schwanog toolholders with internal coolant supply or with mounted spray nozzle offer an optimum solution thanks to improved chip management and significantly longer tool life.

The spray nozzles can be individually directed at the part, and thus provides an optimum supply of coolant.

As a result of the enormously positive response from our customers in recent years, we have consistently expanded the range of tools that have internal coolant supply and spray nozzles.

This solution is currently available for all types of tool holders.

The Result: Reduced machine downtime and significantly higher productivity.

By the Way: We recommend the use of high-pressure pumps with our solutions and will be happy to advise you!

Health management that benefits everyone:

THE SCHWANOG BUSINESS BIKE INITIATIVE!



Cycling has become a trend sport and the many benefits speak for it. Cycling protects the environment, promotes health, and it is a lot of fun to exercise in the great outdoors. On the way to work by bicycle, you can tank up on plenty of oxygen and on the way home you can quickly clear your head.

As part of Schwanog's health management initiative, all our employees can lease a business bike which is also available for private use. This not only saves money, but service checks and fully comprehensive insurance are already included by our partner "Businessbike.de". The price class and features are also freely selectable. Everyone can choose their bike according to their own preferences: whether city bike, MTB, racing bike etc., it is time for more fitness and vitality.

The decision taken by our company for the business Bike initiative was an easy one. For years now, we have been promoting the health of our team with projects such as joint jogging sessions, yoga courses, or events such as company runs for community projects.

The new business bike initiative has now been successfully launched and several employees immediately opted for Schwanog Business Bike Leasing following the launch.

Congratulations on a decade of outstanding achievement and loyalty:

MICHAEL BODEMER CELEBRATES HIS 10 YEARS COMPANY ANNIVERSARY



This year, Michael Bodemer is one of numerous employees who have been working for Schwanog for 10 years or more. During a small celebration, company director Clemens Güntert thanked Mr. Bodemer for a decade of commitment and loyalty.

Michael Bodemer began his career in the metal industry in the early 1980s. As a grinder in a turning shop, he learned to work to the highest standards of precision and quality and subsequently remained loyal to the industry.

At Schwanog, Mr. Bodemer works in the field of logistics and is responsible for numerous diverse tasks. These include laser marking, inspection of the coated inserts, packaging work, and order

picking on a Hänel Rotomat high-speed storage carousel. In his private time Michael Bodemer also enjoys speed; his hobby is motorcycling. In addition, he likes to travel and discover new places.

We wish Mr. Bodemer every success and continuing creativity in the Schwanog team.

Standardization of production workplaces:

5S-METHOD HAS PROVEN ITS MERIT IN THE OBERESCHACH GRINDING CENTER.

Last year, with the aim of continuous process optimization, we used the 5S method to optimize the workplaces in the grinding center.

The 5S method is a systematic approach to designing one's own working environment. The aim is to achieve a structured organization of the workplace and to minimize activities that do not add value, e.g. waste.

Originally the five "S" are derived from the Japanese terms Seiri, Seiton, Seiso, Seiketsu and Shitsuke, which describe the five steps of the 5S methodology. Translated, they mean selecting, systemizing, reviewing, standardizing, and self-discipline. Last year we began to optimize the first production area, the grinding center in Obereschach, with the workstations at the grinding machines.

We were able to draw a very positive conclusion. So-called minor details and personal preferences were standardized by reduction to the essentials and have already led to a measurable increase in efficiency.



In this context, we would also like to thank project manager Peter Erz and all employees involved, for whom the project was truly uncharted territory. Based on the positive experience gained so far, the next step will be to standardize

other workplaces in the EDM and milling production areas.

The benefits of the 5S method:

- Increasing transparency at every workplace
- Increased efficiency through time saving
- Reduction of waste by reducing to the essential
- Greater safety due to cleared work surfaces
- Simplified transfer to other shift through standardization
- Improvement of quality
- Encouraging work routines

New sales representatives for Schwanog USA and China:

WE WELCOME ALISON ZHOU, DAVID BAIRD, FRANK SUNDQUIST AND JEFFREY MALSTROM

By strengthening our sales teams in the USA and China, we continue to drive forward the quality, intensity and efficiency of customer service. We are therefore pleased to be able to welcome four new reinforcements in sales.



Alison Zhou, China

With Alison Zhou we are pleased to have gained an experienced sales assistant. After graduating from the Jiandsu Electronic Vocational College specializing in sales and customer service, Alison has gained extensive experience as a sales assistant in international companies. Since her start at Schwanog in June 2020, Alison has shown a lot of initiative in completing her tasks and distinguishes herself by her cooperative attitude. Her responsibilities at Schwanog include all administrative sales activities as well as purchasing, accounting, and manning the telephone. Her personal interests are varied: reading, watching films, travel, sports, social projects, and spending a lot of time with her family.



Frank Sundquist, USA

Frank joined Schwanog in the summer of 2019 and is responsible for the states of Michigan, Ohio, and Indiana as a territory manager. Frank brings comprehensive knowledge of machining technology with him for this task. In the first 12 years of his professional career Frank worked as a machine setter on Hydromat rotary transfer machines and was responsible for programming and operation. This valuable time was followed by two years in outside sales of a large metalworking distributor. In this combination Frank is exactly the right man for the job, as we are already finding out. Frank likes to spend his free time with his wife and his two children. Boating, fishing, cycling, and watching films are some of his hobbies.



David Baird, USA

David joined the Schwanog team in September 2020 and is responsible for the southeast sales region. Born and raised in Nashville, he initially studied business administration and economics and subsequently majored in Business and Marketing Management. David contributes 24 years of experience in the sale of carbide and HSS tools, and more. His work in the field has already taken him to 46 US states and 5 countries. Obviously, for him sometimes things must just happen quickly, so it is not surprising that his hobbies include fast cars, boats and motorbikes and races of all kinds. David also finds balance in nature with all outdoor activities.



Jeffrey Malstrom, USA

Jeffrey is also new at Schwanog and started working in the sales office in September 2020. He was born in York, Pennsylvania and successfully completed his education at the technical college there, specializing in CAD design and technical drawing. For the first 8 years of his career, Jeffrey was responsible for the operation and programming of CNC machines. Field service appealed to Jeffrey and so he moved to the position of Field Service Technician for mobile heating, ventilation, and air conditioning in busses and semi-trucks. His hobbies and personal interests include disc golf, hiking, and backpacking.



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