

# GÜHRING

11 SUCCESS STORIES FOR GREATER PRODUCTIVITY.  
WITH CUSTOMERS. FOR CUSTOMERS.

2026  
**BEST PRACTICE**



## Carbide & recycling

Keeping recyclable materials in circulation: together with AUMOVIO, Gühring shows how carbide scrap is consistently recycled. Clear processes, transparent prices and direct reimbursement make recycling at Gühring cost-effective. This turns tool scrap into real added value – sustainably and predictably.

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## BT 800 – modular drilling

Quick change, significantly more performance: the BT 800 modular drilling system combines easy handling with high process reliability. At Salzgitter Mannesmann, the tool stands out with an exceptionally clean chip breaking, stable machining processes, and 150% longer tool life in mild steel.

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**” The starting point for every successful solution is not the tool, but the dialogue with the customer.**

Oliver Gühring

Dear readers,

Productivity does not happen by chance. It is the result of experience, innovative strength and, above all, partnership-based cooperation on an equal footing. It is precisely this aspiration that characterises, our customer magazine BEST PRACTICE – and also our daily activities at Gühring. At a time when markets, materials and processes are becoming increasingly complex, our goal remains clear: to develop the best possible solution for every application – with cost-effectiveness, reliability and sustainability.

#### **Improving together – with solutions that work**

Our success stories impressively demonstrate what is possible when technological expertise and partnership-based dialogue come together. Whether in heavy steel construction, high-precision mould making or sensitive industries such as the medical sector: where processes become safer, tool lives increase and costs decrease measurably, dialogue is always the starting point. We listen, analyse together and develop solutions that are precisely tailored to our customers' requirements. This is the case, for example, with the BT 800 modular interchangeable head drilling system, which not only saves valuable time at Salzgitter Mannesmann, but also increases tool lives many times over. Or at RAMPA, where the InoxPro fluteless tap has taken series production to a new level – with significantly higher process reliability and a 150 % increase in tool lives. These are not theoretical promises, but verifiable results from practical experience.

With BEST PRACTICE 2026, we also provide insights into fields of application where precision determines success or failure: from the process-reliable parting off of high-grade steel at Veile Feindrehteile, to micro-precision drilling in high-strength duplex steel at Nagel do Brasil and to custom-made carbon masks for top-level sports, realised with the StepPower drill. These examples clearly show that our high-performance tools are synonymous with uncompromising quality.

#### **Innovation beyond the tool**

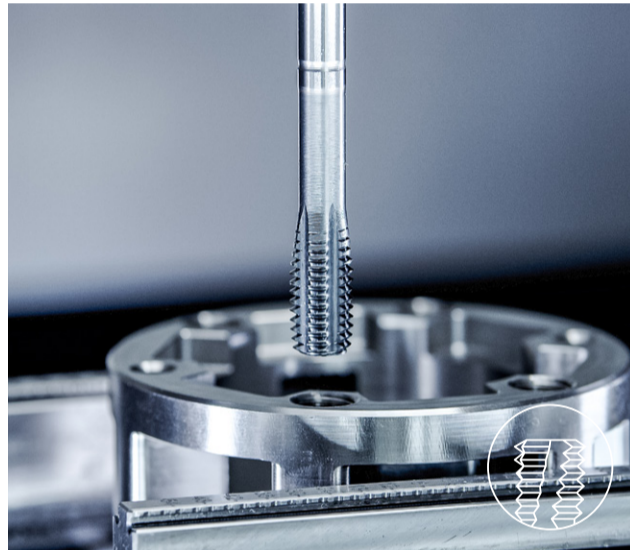
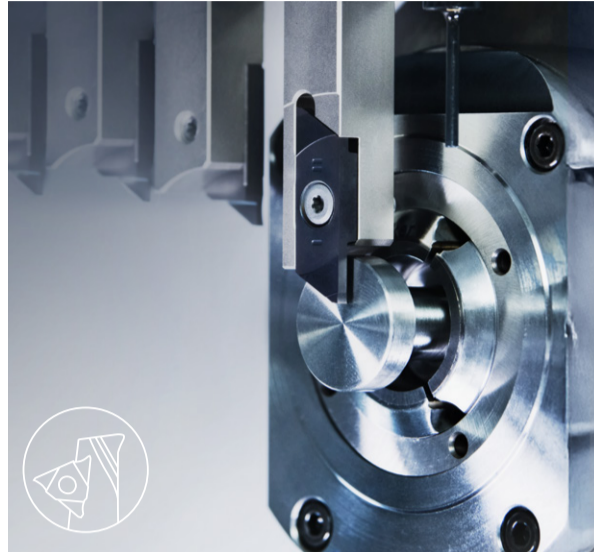
For us, innovation does not end at the cutting edge. It encompasses the entire life cycle of a tool. With the Gühring Tool Circle, we offer our customers a holistic circular economy – and thus genuine economic added value. Practical examples, such as at brake manufacturer AUMOVIO, illustrate how regrinding, recycling and new purchases can be combined to form a functioning overall system. This conserves resources, lowers costs and measurably reduces CO<sub>2</sub> emissions. What all these success stories have in common is the desire to develop solutions that go beyond pure technology. It is about continuously improving processes. As a manufacturer with a high depth of production, our own research and comprehensive services, we take responsibility for quality, for sustainability and for the success of our customers.

Let us continue to create Best Practices together in the future.

  
**Your Oliver Gühring**



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Customer relies on BT 800

# For processes as stable as steel girders

**Modular drilling systems with bayonet interfaces enable quick drill head changes directly in the machine – but problems such as insufficient process reliability and short tool lives can quickly negate these time savings. The BT 800 from Gühring shows that easy handling and strong performance are not mutually exclusive – and excels with 150 % longer tool life compared to the competition.**

Tradition, innovation and reliability – these are the values that Salzgitter Mannesmann Stahlhandel GmbH stands for as a producer and distributor of high-quality steel products. These include flat products, tubes and long products, which are not only characterised by a wide and flexible range of dimensions and grades, but also meet the highest quality standards. In order to meet the increasing requirements for efficiency and precision, the company, headquartered in Mülheim an der Ruhr, focuses specifically on modern tool solutions. These include modular drilling systems, which Salzgitter Mannesmann expects to deliver cost-effective and time-saving drilling processes, especially for larger diameters.

**” We are very satisfied with the process reliability and hole quality.**

Tino Becker,  
production employee at  
Salzgitter Mannesmann  
Stahlhandel GmbH

## **Quick change thanks to bayonet interface**

Production employee Tino Becker explains why interchangeable head systems with bayonet locks are particularly effective: “The drill head can be replaced easily and directly in the machine. Compared to alternative modular drilling systems, where the drill head is secured with clamping screws, we save a lot of time because the BT 800 from Gühring does not have to be removed from the machine and the programme does not have to be interrupted.”

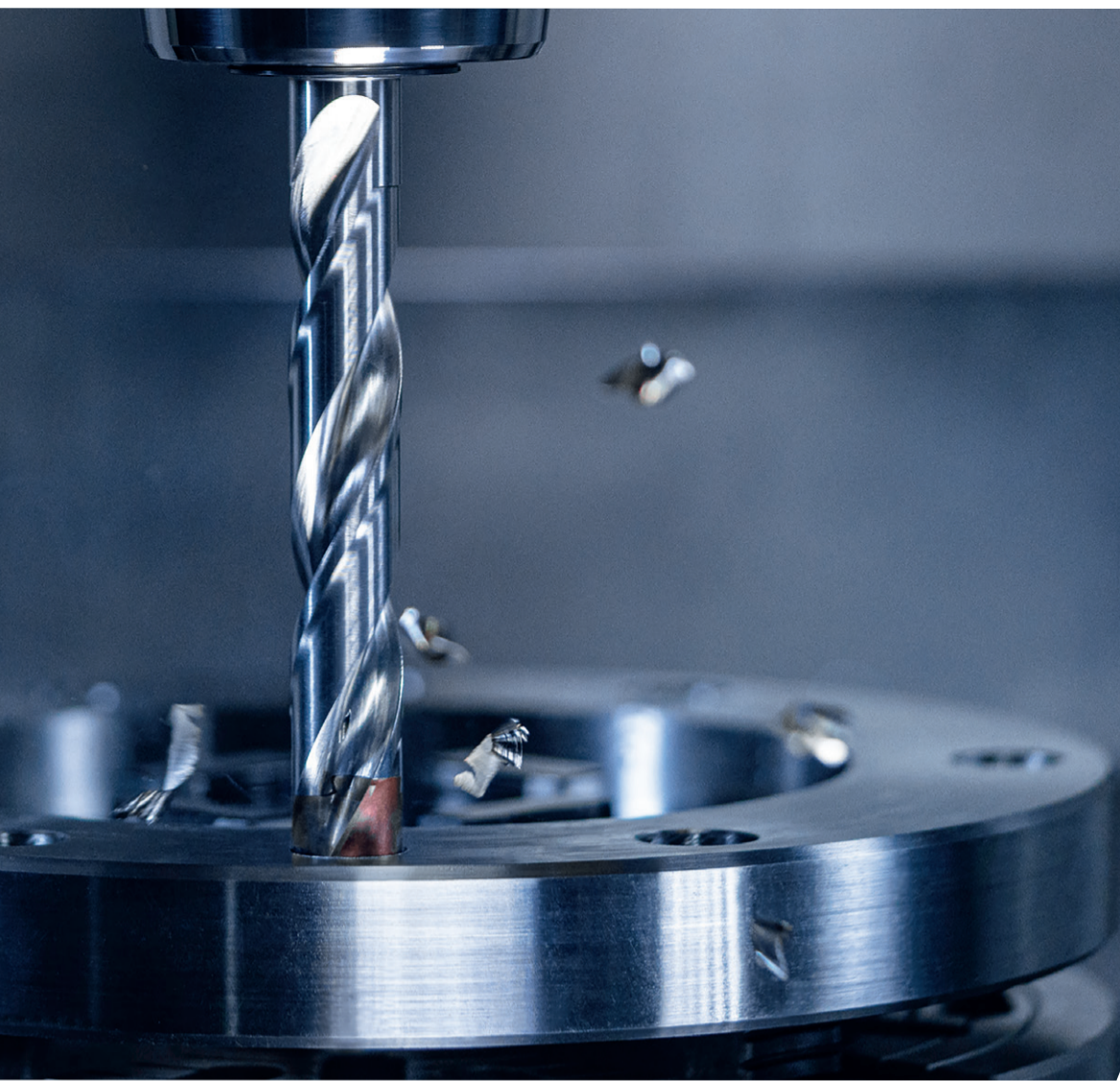
## **Tool breakages & unclean holes**

Salzgitter Mannesmann initially used a drilling system from a competitor of Gühring with a bayonet interface. However, it soon became apparent that simply changing the drill head quickly and easily is not enough when problems arise during an application in mild steel: the company had to contend with long chips and loud drilling noises. This resulted in unclean holes and even tool breakage: “If the holder is also damaged in the process, it can quickly become expensive. The economic advantages of modular tools are then lost,” summarises Tino Becker.

## **150 % longer tool life with the BT 800**

“We can do better than that,” says Gühring application technician Tobias Förderer, proposing a new solution to the long-standing customer: Gühring's BT 800 interchangeable head drilling system combines the advantages of a handy bayonet interface with the performance of solid carbide drills and a long tool life. Salzgitter Mannesmann is convinced of this in the manufacturing of steel girders (mild steel S355 J2), where through-holes with a diameter of 17.5 mm are to be manufactured on a Kaltenbach drilling saw system. And the BT 800 delivers what it promises: “Not only is handling during changeovers easy, we are also very satisfied with the process reliability and hole quality,” confirms Tino Becker. “Compared to the competition, we were able to increase the tool life from 1,333 to 3,320 holes.”





**150%**  
longer tool life



**2x**  
regrinding of the drill head possible



Assembly and use of the BT 800 in the video!

And that's not all: the carbide head of the BT 800 can be subject to up to two rounds of regrinding. This allows the customer to reduce the cost of procurement for more expensive new tools. Tobias Förderer explains how the BT 800 achieves this: "In combination with the wear-resistant Persistum coating, the carbide drill head boasts a long life and maximum resistance to thermal influences. The polished flutes in the holder ensure high process reliability by guaranteeing flawless chip removal.

The coolant ducts with maximum cross-sections and exits in the flutes ensure optimum cooling." Salzgitter Mannesmann also does not have to worry about chip jamming; the combination of geometry, polished flutes and cooling ensures optimum chip breaking and removal from the hole. "The Gühring interchangeable head drilling system is the most cost-effective alternative – the BT 800 has convinced us," summarises Tino Becker.

In collaboration with:



**SALZGITTER  
MANNESMANN  
STAHLHANDEL**  
Ein Unternehmen der Salzgitter Gruppe

**GÜHRING**

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## TOOL PERFORMANCE REPORT

Tool	BT 800	Competitor
Article number	Holder: #8151, Head: #8163	–
Material	Mild steel S355 J2	Mild steel S355 J2
Diameter (Ø)	17.5 mm	17.5 mm
Cutting speed (v <sub>c</sub> )	80 m/min	87.5 m/min
Feed (f)	0.24 mm/U	0.28 mm/U
Tool life	3,320 holes	1,333 holes



**150% longer tool life possible with one tool,  
with improved hole quality**

Greater cost-effectiveness with new indexable insert drills

# Large holes in mould making

Holes of large sizes in form inserts are considered challenging for machining – especially when they have to be drilled directly into the solid material without any preparatory work. The mould maker Braunform GmbH from Bahlingen a. K. was looking for a stable and efficient solution and found it in a new indexable insert drill from Gühring.

Braunform is one of the leading mould and die manufactureres for medical and pharmaceutical technology. Anyone entering the production hall in Bahlingen am Kaiserstuhl immediately sees that large-scale machining takes place here. Huge horizontal milling machines and 5-axis centres are used to manufacture, among other things, plates for injection moulding tools with a size of more than one metre. Each plate is unique, often with individual contours. The diameters of the holes drilled into these form inserts are also large. The hole diameters are up to 52 mm. They are later used for the column guide, which holds both form inserts precisely together during injection. They are drilled directly into the solid material in a typical, unhardened mould-making steel – without centring or pre-machining.

## In search of the optimum

For many years, Braunform used a competitor's indexable insert tool for this machining operation. However, Gühring sales representative Oliver Mattes recalls: "As the previous tool had repeatedly caused problems in the past, this presented an opportunity to introduce the customer to a convincing alternative – which made him much more willing to try it out." There was already trust in Gühring, as Braunform and Gühring had already converted a whole range of tool concepts in recent years – from deep hole drills to threading tools and milling cutters. "Testing a new tool always requires a leap of faith," explains Ralf Strickler, group leader for milling/programming at Braunform. "This is based on our good working relationship and the fact that we have already had many positive experiences with Gühring."





**82%**  
faster drilling



**50%**  
longer tool life

### Gühring tools offer potential savings

When Gühring presented its new indexable insert drill, the tool was still in the testing phase. But that did not stop Braunform from testing the tool in several diameters over a period of six weeks. The results quickly showed clear advantages: the indexable insert tool from Gühring achieved tool lives of over an hour, worked more stably and could be run at higher feed rates than the competitor's tool. This enabled shorter machine runtimes. The surface quality was at the same level as before – in some applications even higher.

However, the Braunform indexable insert drills brought significant improvements, particularly in the process chain. The holes can be drilled directly to almost the final dimensions. This saves several working steps, as neither spindles nor additional drilling tools are required. The tool performs its own centering automatically via the specially designed inner plate. "For us, the biggest advantage is that we can pre-machine to the finished dimensions with very high contour accuracy," explains Strickler. "This saves us additional tools and the time required for tool change cycles." The number of tools used is also reduced, and that means: for each additional tool, there is no need for a tool change cycle and thus no set-up time, wear costs or organisational effort. "We only purchase the holder once; when it wears out, we only replace the indexable inserts."

### "The trial was a success"

The team was also impressed by the handling. With conventional systems, it is easy to confuse inner and outer inserts. Gühring solves this problem by using different geometries, making it impossible to mix them up. The selection of inserts also covers different diameter ranges and fits the existing holders better than the competitor's solutions. As a result, Braunform requires significantly fewer different types of inserts.

Chip removal also plays an important role in everyday application. Large drilling diameters mean long, voluminous chips that can quickly lead to malfunctions. "Chips are our biggest enemy," says Ralf Strickler. "With the Gühring drill, we have this well under control."

Braunform now uses the tool in many diameters on numerous machines – and is thus consistently relying on a solution that has proven itself in everyday use. The decision was not made based on a single advantage, but rather on the sum of all effects. Or, as Ralf Strickler sums it up: "The experiment was a success."

Oliver Mattes (Gühring, left) and Ralf Strickler (Braunform) are impressed by the new indexable insert drill.

In collaboration with:



**GÜHRING**

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### TOOL PERFORMANCE REPORT

Tool	Indexable insert drill	Competitor
Article number	Holder # 28502	–
Material	1,2085, X33CrS16	1,2085, X33CrS16
Diameter (Ø)	28 mm	28 mm
Cutting speed (v <sub>c</sub> )	170 m/min	140 m/min
Feed (f)	0.18 mm/U	0.12 mm/U
Tool life	60 min	40 min



#28504



#28508

For machining of steel and castings



#28505




#28509

For machining high-grade steel and difficult-to-cut alloys in the ISO M and ISO S field



**50% longer tool life with the same surface quality**



150 % longer tool life  
with the InoxPro fluteless tap

# Internal threads in perfect shape

**Gühring and RAMPA demonstrate how strong connections are created: by using the new Gühring InoxPro fluteless tap, the Büchen-based company can increase the tool life in the manufacturing of internal threads by 250 %. RAMPA can also count on perfect dimensional accuracy and maximum process reliability thanks to the specialist for Inox machining.**

When it comes to fastening technology and the development of connection solutions for screw connections, RAMPA GmbH & Co. KG is a reliable full-service company that always has a solution ready for its customers' individual challenges: Founded in 1907, the Büchen-based company offers a wide range of sleeves, drive-in nuts, round nuts, cross-thread bolts and clamping screws, which are used in various materials such as wood, plastics and metal. RAMPA relies on fluteless taps, especially in large-scale thread production: "This manufacturing method is extremely process-reliable, explains Christopher Brandt, technical manager at RAMPA, using the example of standard machining: "The stainless steel component (1.4305) is provided with a blind hole and

**” Process optimisation with the InoxPro fluteless tap also enables us to increase production capacity.**

Christopher Brandt,  
technical manager at RAMPA

deburred, then the internal thread is formed. The difficulty with this machining process is to set it up in such a way that the machine can run unattended at night and on weekends.

Maximum process reliability is therefore essential," reports Brandt. However, in addition to process reliability, tool life also plays a decisive role in fluteless tapping: the longer the tool life, the fewer outliers in the production process – and the more consistent the quality of the components.

A competitor's fluteless tap is used for the application, which achieves a tool life of 1,800 components.

#### **InoxPro fluteless tap: Perfect results in stainless steel**

"There is still room for improvement," says Gühring sales representative Andreas Borowski, who has been supporting RAMPA for several years. "Even if a process works in principle, it is important to continuously improve it." For this reason, Borowski does not hesitate to introduce his customer to a new product from Gühring that has been specially developed for machining operations on stainless steel materials: the InoxPro fluteless tap. This tool is characterised by maximum tool lives and perfect

dimensional accuracy. Thanks to its coordinated macro and micro geometry with optimised lubrication groove geometry and polygon shape, users can also rely on maximum process reliability when fluteless tapping in stainless steels. The fluteless tap owes its outstanding tool life to its particularly smooth and temperature-resistant HiPIMS AlCrN coating, which allows users to achieve significantly better tool life compared to conventional fluteless taps under otherwise identical conditions. The tool thus meets all the requirements that RAMPA has for the manufacturing of internal threads.

#### **Immediately convincing**

"We went into the test without any expectations and replaced the InoxPro fluteless tap one-to-one in the process," recalls Brandt. And the tool was immediately convincing: "The fluteless tap did exactly what it was supposed to do. We were able to increase the tool life from 1,800 to 4,500 components. What more could you want?" says Brandt happily. In addition to the associated cost savings, RAMPA is achieving another, even more important goal: "For us, the runtime on the machine is ultimately decisive. By optimising the process with the InoxPro fluteless tap, we are also increasing production capacity," explains Brandt.



Gühring sales representative Andreas Borowski (left) with RAMPA employees Marcel Albers (right)

**2.700**

more components with the same cutting parameters

**150 %**

longer tool life



Discover our specialists for the cost-effective machining of stainless steel.

### Specialists in stainless steel machining

In addition to the InoXPro fluteless tap, Gühring offers other tools that excel when machining stainless steels. These include, for example, the high-performance taps Pionex, the InoXPro solid carbide drills and the InoXPro micro drills.

What these tools have in common is shorter cycle times, longer tool lives and maximum process reliability.

Fluteless tap  
**INOXPRO**



### TOOL PERFORMANCE REPORT

Tool	Inox Pro fluteless tap	Competitor
Article number	# 8100	-
Material	X8CrNiS18-9 (1.4305)	X8CrNiS18-9 (1.4305)
Diameter (Ø)	M8	M8
Cutting speed (v <sub>c</sub> )	14 m/min	14 m/min
Feed (f)	1.25 mm/U	1.25 mm/U
Thread depth (a <sub>p</sub> )	16 mm	16 mm
Tool life	4,500 threads	1,800 threads



150 % longer tool life despite identical cutting parameters

In collaboration with:

**RAMPA®**

**GÜHRING**

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## Sugar-sweet machining

# High-tech micro drills master high-strength challenges

**Sugar cane is an important economic driver in Brazil. Precision machines are needed to process the hard sweet grass efficiently – and tools that won't wear out even after thousands of holes. Gühring provides the solution.**

A trader sells freshly squeezed sugar cane juice at the side of the road in São Paulo. The taste is sweet, slightly tart, very refreshing – and for many, the epitome of everyday Brazilian culture. But sugar cane is not just synonymous with street stalls and caipirinhas. In Brazil, it is a key economic factor: the sweet grass grows on over 8 million hectares and produces around 40 million tons of sugar annually – more than any other country in the world.

This requires highly specialised machines that mechanically crush the hard tubes and separate the sugary raw juice from the plant fibres. These machines are built just an hour's drive from the street vendor – in Salto, at the Nagel do Brasil company. The production facility covers 25,000 m<sup>2</sup> and is equipped with modern machining centres, CNC lathes and grinding machines. The 110 employees specialise in the development and manufacture of tailor-made, high-precision and highly productive industrial plants. These are used not only for processing sugar cane, but also paper and pulp.

### **402,000 holes in high-strength duplex steel**

At the heart of the industrial plants for sugar cane processing are large, perforated plates made of super duplex high-grade steel measuring 2.5 m x 3.5 m and 10 mm thick. Until now, Nagel do Brasil has purchased these perforated plates ready-made. However, importing them from abroad led to long delivery times and high costs, which impaired competitiveness in the long term. The company therefore wanted to manufacture these parts itself. However, with up to 402,000 holes per plate of the challenging stainless-steel material with diameters of 1.5 and 2.0 mm and a drilling depth of 10 mm, high-end micro drills are indispen-

sable. Duplex steel is ideal for machine parts used in sugar cane processing, primarily due to its particularly good corrosion resistance and significantly higher strength and toughness compared to other high-grade steels. Conversely, however, the material is particularly challenging to use for machining.

The micro drills used by Gühring therefore had several hurdles to overcome: they had to maintain a consistent through-hole quality over an extremely long tool life. None of the tools previously tested by Nagel were able to meet these requirements. Only the tool from Gühring delivered the ultimate success.

### **Micro drills ensure process stability**

The ExclusiveLine RT 100 InoxPro micro drill achieved a perfect result with its efficient chip removal and excellent wear resistance. The tool impressed not only in this customer project with its high process reliability and short chips thanks to its geometry optimised specifically for stainless steels with crescent-shaped cutting edges, the material-specific flute profile and the polished flute. In combination with internal cooling and the Gühring HiPIMS Perrox coating, it is a guarantee for success. Dario Fernandes Moreno, Sales and Production Manager in the Drilling Field at Nagel do Brasil, is convinced: "The RT 100 InoxPro micro drills

from Gühring were crucial in overcoming these challenges and delivered high precision and long tool lives under demanding conditions."

### **Shorter cycle times and significant cost savings**

With the RT 100 InoxPro micro drills, Nagel achieves the desired cycle times and cost efficiency through higher cutting speeds and longer tool lives. Up to 10,000 holes can be drilled with one tool. The exceptional reliability – even with high cutting parameters and correspondingly shortened drilling cycle times – makes machining at Nagel efficient and sustainable. This results in significant cost advantages. The switch to Gühring tools has therefore proven to be cost-effectively advantageous and is clearly paying off for Nagel do Brasil. "Thanks to the RT 100 InoxPro micro drill, we achieve precise machining of the stainless-steel plates – consistently high quality over thousands of holes," says Dario Fernandes Moreno. Gühring application technician Orivaldo Fantini adds: "We are seeing significantly higher feed rates and extremely stable processes – this is exactly what brought about the breakthrough in the application."



### **TOOL PERFORMANCE REPORT**

Tool	RT 100 InoxPro micro drills	Competitor
Article number	# 6489	–
Material	Super duplex high-grade steel	Super duplex high-grade steel
Diameter (Ø)	1.5 mm	1.5 mm
Cutting speed (v <sub>c</sub> )	52 m/min	52 m/min
Feed (f)	0,038 mm/rev	0,038 mm/rev
Tool life	10.000 holes (40 m)	200 holes (0.8 m)



**50 times longer tool life and significant cost savings**



**50-times**  
longer tool life



**10,000**  
holes with one tool

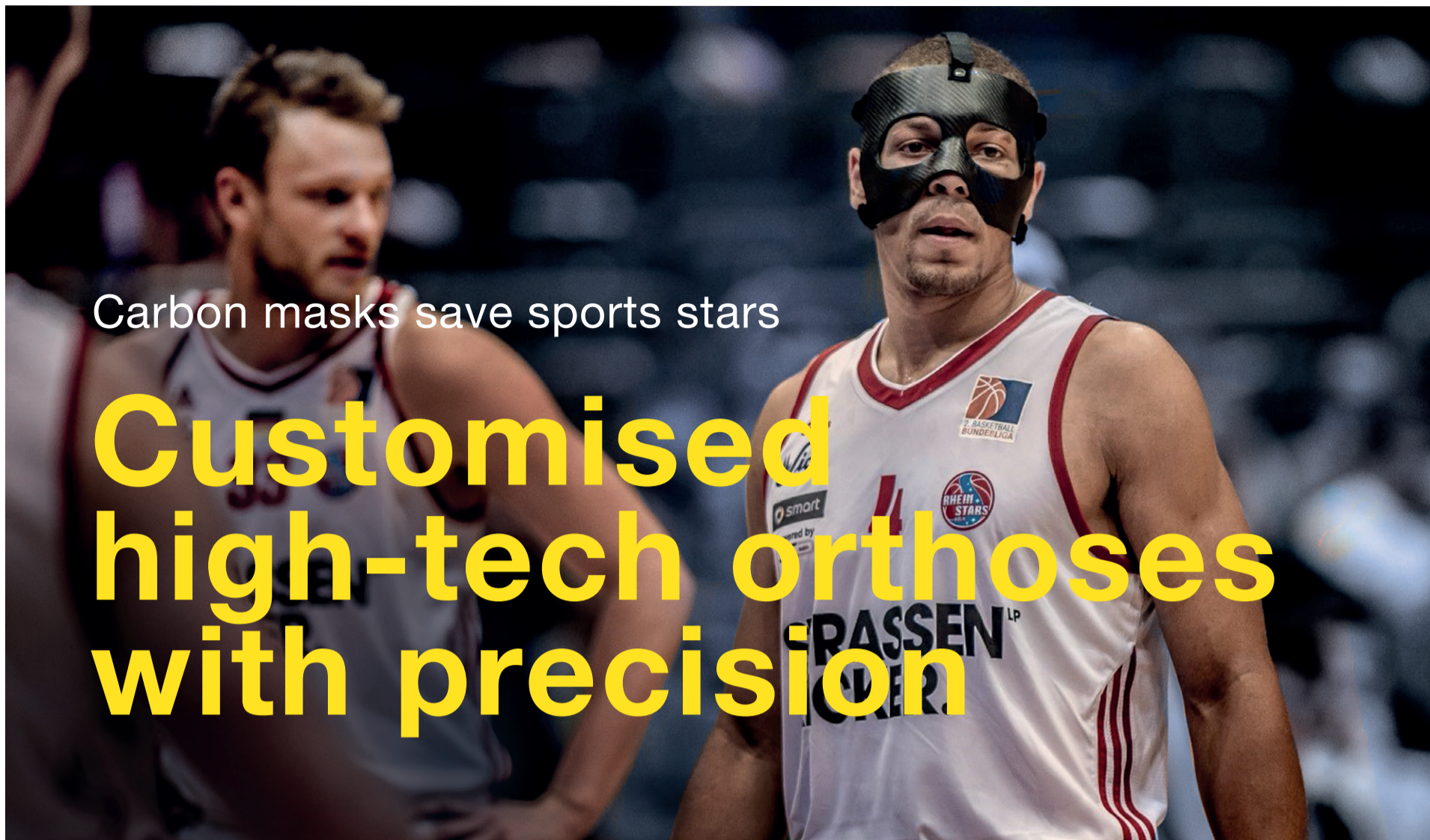


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Carbon masks save sports stars

# Customised high-tech orthoses with precision

**Sunday afternoon, the hall is rocking, 5,000 voices singing their hearts out. The ball bounces off the basketball court floor, flies through the air in a wide arc, two players race towards each other, both with tunnel vision on the ball. A dull “thud”, followed by a bright, barely audible “crack” – like breaking ice under heavy shoes. A face contorted in pain; a hand shoots up instinctively. Blood slowly drips onto the vinyl. Nose: broken. Coach: desperate. Especially for key players in a team, an injury due to a broken nose or cheekbone is catastrophic. This is exactly where Malzkorn’s product comes in: carbon fibre-reinforced face masks for top-level sport.**

What looks like Batman is actually premier class orthopaedic technology. Carbon fibre-reinforced face masks allow millionaire players in the Bundesliga, NBA or NFL to continue playing despite facial injuries. They are individually adapted to the carrier’s face in sessions lasting several hours. The StepPower drill from Gühring shines in the final process step.

#### Video leads to collaboration

It all started with a video that Gühring sales representative Marcel Horn saw on social media. The video shows the manufacturing of

a customised face mask for a player in the German Bundesliga. The nose that needed protecting belonged to a footballer who had been injured during a match. In order to continue playing, he needed a mask to protect his broken nose from further injury.

This is where Sebastian Malzkorn comes into play. The camera follows the master orthopaedic technician as he places a custom-made carbon mask on the player’s face and adjusts it with a few final touches. Finally, he uses a twist drill to drill two holes in the mask on the right and left sides to secure it in place. To do this, he has to hold the mask in his hand and feel exactly when the drill breaks through the back. When Gühring sales representative Marcel Horn sees the video, he knows immediately that there is a better way. He contacts Sebastian Malzkorn, who, together with his brother Alexander Malzkorn, runs the fourth-generation medical supply store Malzkorn GmbH in Cologne. With 45 employees at five locations, the company specialises in aids for people with physical disabilities, sports injuries or limitations after surgery. These aids include shoe insoles, orthoses and arm and leg prostheses.

#### Poor holes are expensive

Each of these parts is unique and made specifically for the patient. Sebastian Malzkorn takes an impression of the face for the carbon mask, for example. “I always do this by hand, because the tactile aspect is incredibly important to me in order to get the best out of the product,” explains the master orthopaedic technician. “I have to feel the depth and palpate the area of the body. This ensures that the mask fits snugly on the face and does not

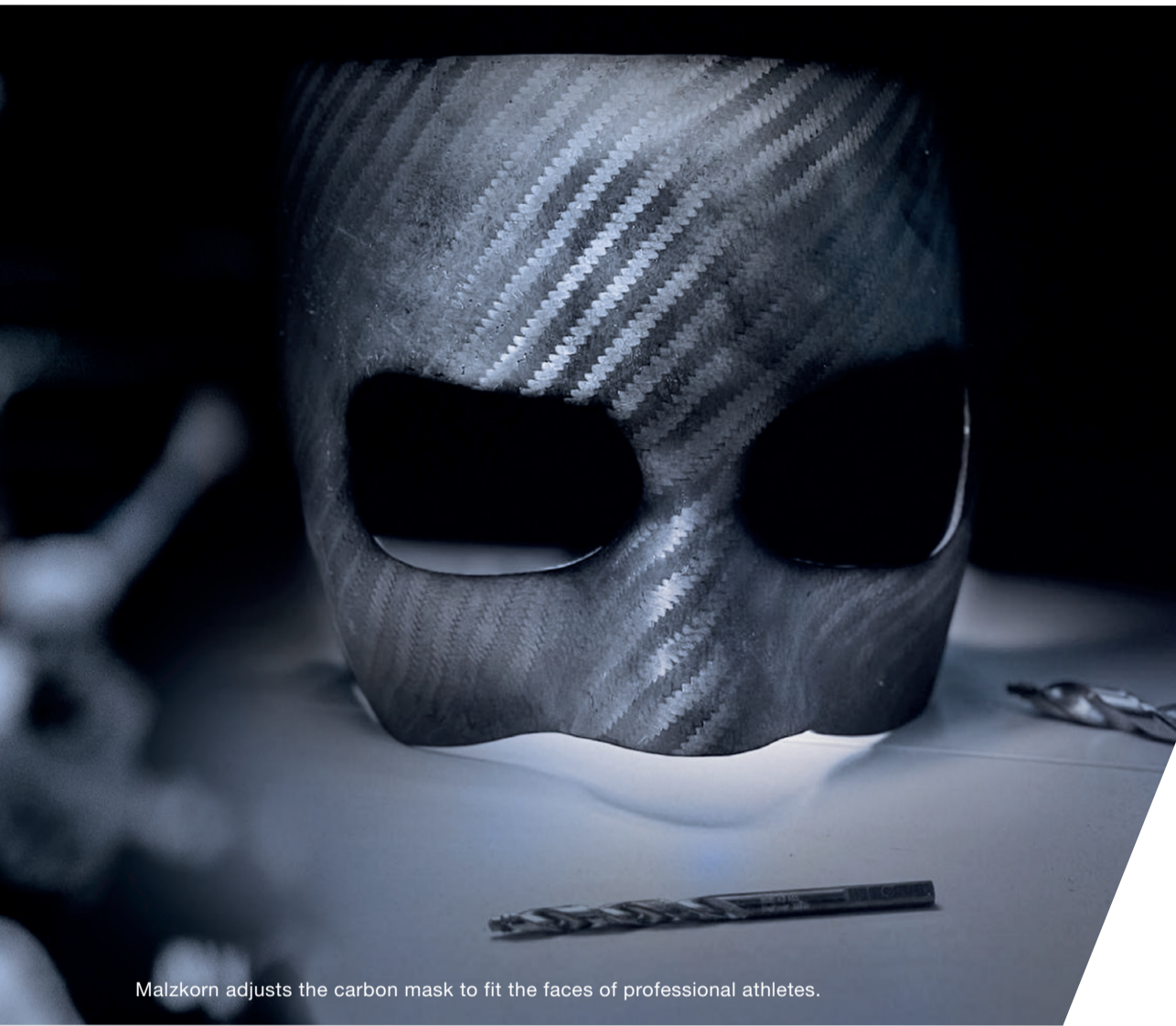
bother the wearer.” The impression is then cast into a model, over which the carbon is subjected to moulding using a vacuum process. The entire process takes around 16 hours, and only at the end are the side holes drilled into the mask.

“The holes must then, of course, function properly and look neat,” notes sales representative Marcel Horn.

“There is nothing worse than putting many hours of work into a component, only to have it end up in the bin.” But that is exactly what has happened repeatedly in the past. Malzkorn often uses demanding materials such as carbon or glass fibre-reinforced plastics as base materials, as these are very light and still offer a high level of protection for the face. However, machining

“ I can rely on the tool to work, and that takes a lot of stress off me.

Sebastian Malzkorn,  
Director Malzkorn GmbH



Malzkorn adjusts the carbon mask to fit the faces of professional athletes.



**60 min.**  
of rework saved



**0%**  
waste

#### The StepPower by Gühring

- Excellent self-centring without pre-drilled holes
- Effortless machining with low burr hole exits
- No slipping in the chuck
- Outstanding tool lives even with higher-strength materials

Step**Power**

these materials can cause chipping and burrs on the hole, which then must be laboriously ground down and countersunk. In the worst case, the previous drills were unable to produce a precise hole, and the entire process had to be started again from scratch. This is particularly annoying because Malzkorn GmbH supports international sports teams, for example in the field of American football, and NFL players are flown in especially for a mask.

#### From now on, only StepPower

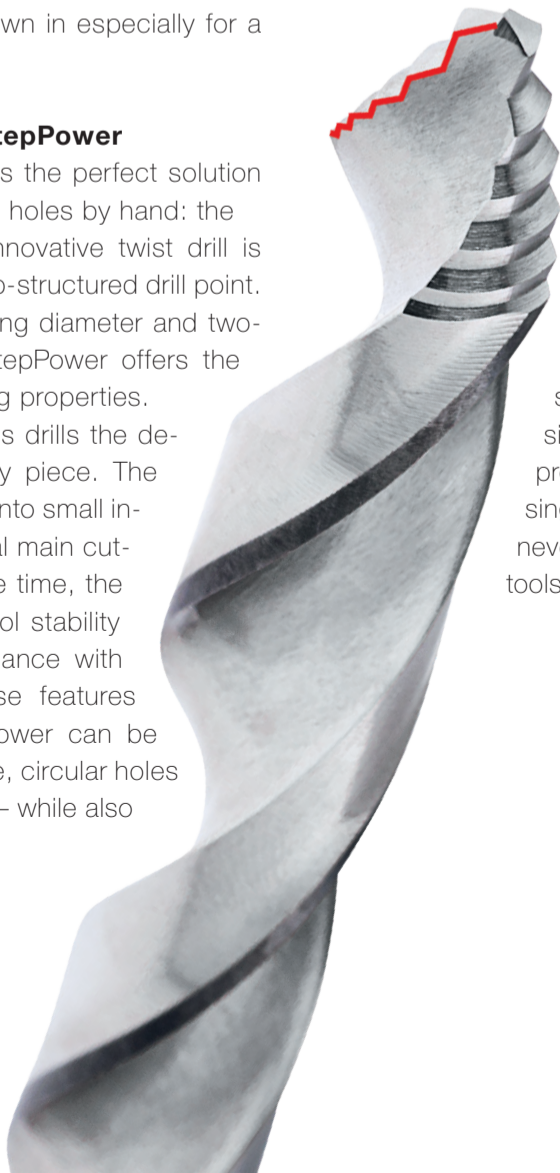
Fortunately, Gühring has the perfect solution for guaranteed burr-free holes by hand: the StepPower drill. This innovative twist drill is characterised by its step-structured drill point. Thanks to its small drilling diameter and two-stage core rise, the StepPower offers the best drilling and centring properties. The step drilling process drills the desired diameter piece by piece. The chips are broken down into small individual chips by several main cutting edges. At the same time, the tool excels with high tool stability and optimum tool guidance with minimal effort. All these features ensure that the StepPower can be used to produce precise, circular holes and burr-free hole exits – while also having easy handling.

The big advantage for Malzkorn: StepPower completely eliminates the need for reworking, which leads to enormous time savings. Sebastian Malzkorn was convinced from the start: "From the very first hole drilled with the StepPower, we achieved perfect positioning for clean holes without chipping." Malzkorn now uses the step drill for holes in all materials.

"For us, the StepPower is the all-round happy package.

I can rely on the tool to work, and that not only makes my everyday work easier, but also takes a lot of stress off me," says Sebastian Malzkorn.

"Handling is much easier; I can now simply position the component and produce a perfect hole in a single working step. That was never easily possible with the tools we used before."



In collaboration with:



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# Carbide recycling

When a cutting tool loses its cutting properties, that's not the end – it's just the beginning: Gühring buys worn out tools and other carbide scrap and recovers valuable secondary raw materials from them, which are used to manufacture new, high-performance tools.

The Gühring Tool Circle enables companies to recycle their carbide scrap easily. Customers order a collection barrel, which is provided for free and collected again once it is full. The weight, contents and credit note are then documented in a transparent and traceable manner. Gühring takes care of the entire recycling logistics process, so customers don't have to worry about a thing. And because everything from carbide production to recycling takes place in Germany at Gühring, they also benefit from guaranteed supply chains.

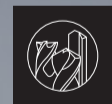
#### Sustainability without compromise

Thanks to its own carbide technology and recycling facilities, Gühring is able to recover and recycle almost 100 % of raw materials. This has several advantages: natural resources such as tungsten and cobalt are conserved and used sustainably through recycling. Furthermore, 65 % CO<sub>2</sub> is saved compared to carbide production using primary raw materials.

#### Customer loyalty is rewarded: the Gühring bonus model

Gühring uses the current carbide market price for a fair repurchase, which can be conveniently viewed using the online scrap calculator. But that's not all: with the Gühring bonus model, customers receive up to 15 % on top of the market scrap price, which is issued as a credit note for the purchase of new tools. There is already a 3 % bonus for pure carbide recycling. Customers who also purchase new tools, have tools undergo regrinding or use Gühring Tool Management receive an additional 3 % in each case. Full participation in all four fields results in an additional bonus, which increases the total credit note to up to 15 %.

**Get better prices for your carbide scrap and buy your new tools at a lower price!**



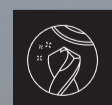
#### New tools

**from the manufacturer**, because this gives you access to manufacturing know-how and machining competence.



#### Tool management

**from the manufacturer**, because this gives you an overview of the entire life cycle of your tools and saves you process costs.



#### Regrinding

**from the manufacturer**, because only here can you obtain original quality and even save up to 62 % on tooling costs first-hand.



#### Carbide recycling

**at the manufacturer**, because we close the loop with recycling in Germany.



**This is how much your scrap is worth: calculate now!**

<https://guehring.com/en/service/circular-economy/#scrap-calculator>





**65%**

less CO<sub>2</sub> thanks to recycling



**≤ 15%**

discount when purchasing new tools



**100%**

recycling in Germany

**3%**

**PREREQUISITE**



Carbide recycling

All 4 fields completed?  
Then you will receive

**+3%**

**= 15%**

in addition to the  
market scrap price



Tool management



New tool

Regrinding



**BONUS**

**+3%**

**+3%**

**BONUS**

**+3%**

**BONUS**

Example: **50 kg** x **90€\*** + **15%** = **5,175€**

Carbide scrap  
Quantity

Market price  
per kilo

Bonus achieved  
Total

Credit note  
on new tools

March  
2026

\* The current carbide repurchase price is updated daily  
and can be found on the Gühring homepage:  
<https://guehring.com/en/service/circular-economy/>



A closed cycle as a  
cost-effective solution

# The Tool Circle in action

**Using tools longer thanks to the regrinding service, reusing them recovering raw materials and ultimately providing customers with an economic advantage: Gühring demonstrates how a modern tool cycle works today, and AUMOVIO benefits from it every day. With the Gühring Tool Circle, the technology company returns its carbide scrap to the cycle with minimal effort and saves on new purchases – a system that simply works reliably.**

In Rheinböllen, state-of-the-art brakes for the automotive industry are manufactured on rotary transfer machines. Carbide tools drill holes and threads or perform milling operations on the contours of the components. Once the tools have reached the end of their tool life, they end up in the tool maintenance department, or more precisely, with technical support staff Bernd Rudersdorf and Jörg Span.

The two examine each tool closely: Can it be reground? If so, it goes back to the manufacturer, explains Jörg Span: “When the tools are blunt, we send them to Gühring. There they are reground, coated and then returned to us.” This standardised process not only creates technical stability but also enables AUMOVIO to make reliable calculations.

This means that tool prices remain predictable, regardless of current market movements or

short-term procurement cycles. The process between AUMOVIO and Gühring has been running smoothly and without any coordination effort for over 20 years. Bernd Rudersdorf notes that there is simply a lot of trust in Gühring: “If we have any problems, we contact Gühring and together we make sure that everything runs smoothly again.”

## A "historic" collaboration

According to Bernd Rudersdorf, the partnership between AUMOVIO and Gühring is almost “historic”: “We have actually always used tools from Gühring, at least for the 35 years that I have been with the company.” AUMOVIO, with 86,000 employees worldwide, was formed in 2025 from the traditional company Continental, which has been manufacturing brake components for renowned car manufacturers for decades. As a new line of business, the company also develops and produces autonomous mobile robots. The combination of experience, large-scale production expertise and continuous development continues to shape the site in Rhineland-Palatinate to this day. However, manufacturing challenges have grown over time, which is precisely why regulated and efficient tool cycles are playing an increasingly import-

ant role. This is where an important component of the Gühring Tool Circle comes into play: carbide recycling.

## Carbide recycling with Gühring – transparent and professional

In the tool maintenance department at AUMOVIO, there is a striking yellow barrel with the word “GÜHRING” written on it in large black letters. This is where all the carbide tool scrap from manufacturing ends up. Drills, milling cutters, indexable inserts – everything that has reached the end of its cycle is collected in the container. As soon as the barrel is full, AUMOVIO asks for the current carbide price and commissions Gühring to collect it.

Recycling has been carried out regularly by Gühring for around five years. Previously, AUMOVIO previously worked with various trading partners and tool manufacturers. However, the experiences were not always positive. Sometimes the prices fluctuated,

sometimes the process was confusing, and quantities and values often had to be renegotiated. “We always had to negotiate with scrap dealers and still felt that there was room

**” The Gühring employees and we are a well-coordinated team. There's no discussion – everything runs smoothly, transparently and professionally.**

Bernd Rudersdorf,  
AUMOVIO



From left to right: Jörg Span, Bernd Rudersdorf (both AUMOVIO) and Tobias Grotz (Gühring) are jointly responsible for recycling the carbide scrap.



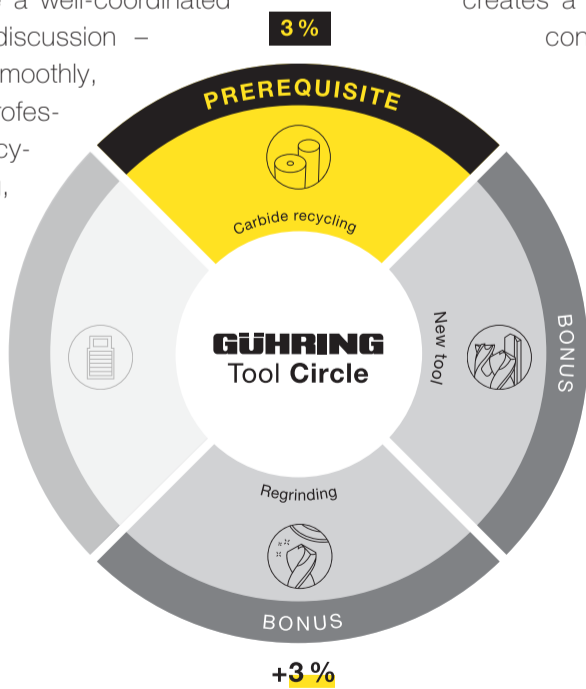
**700 kg**  
of recycled carbide scrap

Simply send the order form to your personal contact or at [recycling@guehring.de](mailto:recycling@guehring.de)



You can find the form here: [https://guehring.com/wp-content/downloads/EN/Carbide/Guehring\\_carbide-recycling-bonus-model-form-drum-order\\_EN.pdf](https://guehring.com/wp-content/downloads/EN/Carbide/Guehring_carbide-recycling-bonus-model-form-drum-order_EN.pdf)

for improvement,” recalls Bernd Rudersdorf. AUMOVIO was looking for a solution that would save time and offer full transparency. In the end, the company chose Gühring. Why? “Gühring has the nicest barrels,” jokes Rudersdorf. In fact, he compared carbide prices from different suppliers and found that the differences in price were marginal, but decisive in terms of logistics and full transparency. In the end, the process with Gühring won him over. “The Gühring employees and we are a well-coordinated team. There’s no discussion – everything runs smoothly, transparently and professionally.” When recycling with Gühring, there is no haggling because the process follows fixed steps. The filled barrel is collected and taken to the Gühring recycling site in Thurnau, Bavaria.



Gühring now operates two of its own recycling plants there and has the largest zinc recycling plant in Germany.

### The Tool Circle as a functioning cycle

The combination of regrinding and recycling demonstrates how the Gühring Tool Circle works in practice. The tools are used, re-ground, reused, and finally recycled and returned to the material cycle as raw materials. This creates a cycle that reduces material consumption and at the same time creates an economically stable basis for tool supply. Although AUMOVIO uses its own tool management system, it still fulfills three of the four modules of the overall concept: purchase of new tools, regrinding of worn-out tools and recycling of carbide scrap.

Last year, AUMOVIO sent around 700 kilograms of carbide scrap to Gühring for recycling. With the Tool Circle bonus of nine per cent, AUMOVIO receives a refund that flows back into the cost-effectiveness of its manufacturing.

In cooperation with:



Wilfried Hartmann  
Product Manager Carbide  
[wilfried.hartmann@guehring.de](mailto:wilfried.hartmann@guehring.de)  
Service-Hotline: 00800 2607 2607

Example calculation:	<b>700 kg</b>	<b>x</b>	<b>34 €*</b>	<b>+</b>	<b>9%</b>	<b>=</b>	<b>24.000 €</b>
	Carbide scrap Quantity		Market price per kilo		Bonus achieved Total		Credit note on new tools

November 2025



\* The current carbide repurchase price is updated daily and can be found on the Gühring homepage: <https://guehring.com/en/service/circular-economy/#scrap-calculator>

Seven cabinets become three

# Tool management creates space in manufacturing

At least once a week, Roman Loginov checked all the tool cabinets in the turning shop. It was a time-consuming task, but it was necessary to ensure that all the tools required for production were available in the appropriate quality. He checked which tools required follow-up orders. His small inventory check took at least half an hour. When he saw that a tool was running low, he removed a card with the corresponding article number and passed it on to his production manager, Patrick Zahal, for reordering. Zahal took all the cards and placed follow-up orders for the tools.

Halstrup-Walcher managed its tools using this Kanban system for many years. The Kirchzarten-based company develops and manufactures precision drive technology and metrology – often as customised solutions for customers. Numerous milling, turning and gear cutting machines are used in individual-part machining. The demand for tools that need to be managed is correspondingly high. “The system basically worked,” recalls Patrick Zahal. “But it was very time-consuming. The daily walking distances and manual lists were tedious and prone to errors due to the manual work involved. It took us a lot of time to meet our quality standards.”

## TM 326 – Step into the digital age

“It was clear that we had to fundamentally address the issue of tool management,” explains Oliver Mattes, who has been supporting Halstrup-Walcher as a Gühring sales representative for over ten years. And so, Halstrup-Walcher decided to take the step towards digitalisation: the TM 326. The TM 326 is part of the Gühring Tool Management family and offers a flexible storage solution with electronically locked drawers. Employees identify themselves via chip card or scanner, select the desired tool and remove it in a controlled manner. Every process is documented by the Gühring Tool Management Software (GTMS). “We were convin-

ced by the fact that the system is versatile and easy to use at the same time,” says Zahal. “We didn't want a system that required constant training. With the TM 326, everyone can work quickly and intuitively.” The system was individually adapted to the company's needs, from drawer layout to user management.

## Reducing unnecessary stock levels

The introduction of the new cabinet had a noticeable impact at Halstrup-Walcher: where there used to be seven conventional tool cabinets, three TM 326 cabinets from Gühring are now sufficient – and they are not even full. “The cabinet made it easier to check the tool stock and ultimately reduce it,” recalls Mattes. This is because the cabinet provides an indication of the monthly evaluation showing which tools are actually being used. In this way, surplus stock levels can be reduced and storage costs lowered. Ordering processes are also more efficient today. Instead of regularly collecting cards, the system generates a weekly order list with all the tools required. “We used to have around 15 orders per week, now we have five,” reports Zahal. “That's 60 % less effort – and at the same time more certainty that the right items are being ordered.” In addition, the cabinet already provides the order lists with stored article numbers and cost centres. One invoice per week replaces numerous individual receipts – a clear advantage for purchasing.

## Transparency creates trust

At Halstrup-Walcher, the TM 326 not only manages Gühring tools, but also measuring instruments, compressed air tools and car keys. This is particularly practical in everyday use, explains Zahal: “We now know at any time who has taken which tool or device – this saves search times and discussions.” Halstrup-Walcher is also gradually integra-

“We were impressed by the fact that the system is versatile and easy to use at the same time.”

Patrick Zahal,  
Production Manager,  
Halstrup-Walcher

ting the system into its own ERP system. In the future, tool data will be automatically incorporated into orders, including wear data and regrinding intervals. This will create a closed system that digitally connects procurement, warehouse and production.

The introduction of tool management has not only changed processes at Halstrup-Walcher, but also the awareness within the team. “Today, everyone can see which tools are where, who is using them and when they need to be replaced,” says Zahal. “This creates full transparency and responsibility.” For Oliver Mattes, the project shows how practical digitalisation can be in manufacturing:

### TM 326 + GTMS logistics module

- 8 drawers
- electronically locked dispensing system
- manually actuated drawers with LED indication and full extension
- installation height: 1700 mm (including attachment)
- usable height: 900 mm
- 21.5" HD touchscreen monitor
- PC with WIN 10, 64 bits
- scanner for barcodes and QR codes



**60%**  
less ordering effort



**3**  
cabinets instead of 7 creates space



Patrick Zahal greatly appreciates the new order.

"We're not talking about theory here, but real benefits. The TM 326 takes work off our hands, provides an overview and gives employees time for what's important: production." Roman Loginov is also grateful for the relief that the TM 326 has brought to his daily work: "It's an absolutely usable system – transparent and convenient."

In cooperation with:

 **halstrup  
walcher**

**GÜHRING**

Marcello Mintrone  
Vertrieb Tool Management  
marcello.mintrone@guehring.de  
Service-Hotline: 00800 2607 2607



Drilling in tractor construction

# Cutting power for agriculture

**When the sun rises over the fields in the morning and the first tractors roll across the dew-covered earth, one thing counts above all else: reliability. Agricultural machinery must function under harsh conditions, often for many hours on end and far away from any repair shop. Every component, every connection and every hole contributes to ensuring that these machines can deliver their performance.**

This is precisely where companies such as Maquinaria Magnum come into play. In Torreón, a region of Mexico that has been closely linked to agriculture for decades, components are manufactured for modern tractors that are used in fields around the world. What later works reliably and invisibly in the soil requires the highest precision in manufacturing, stable processes and tools that deliver consistent performance even under demanding conditions. As a subsidiary of Magnum Machining Inc., the company draws on decades of experience in CNC machining. The spectrum ranges from small precision parts to massive components weighing several tonnes. Maquinaria Magnum produces rear axles made of GGG-45, among other things, for a well-known American tractor manufacturer.

**“Communication is precise and support is very comprehensive.”**

Carlos Rodriguez  
Magnum Machining Inc.

Frequent head changes for competitive tools Mounting holes are to be drilled into these solid rear axles, which must meet the highest requirements for dimensional accuracy and process stability. Strictly speaking, this involves a hole pattern consisting of 20 holes, each 17 millimetres in diameter. This is no easy task, as spheroidal graphite iron, which is widely used in tractor construction due to its combination of strength and toughness, causes cutting forces to increase significantly at larger diameters. At the same time, the short-chipping, abrasive material requires a wear-resistant geometry and reliable chip removal to avoid dimensional deviations and tool damage.

Before working with Gühring, Maquinaria Magnum used a changeable head drill from a competitor. However, this only achieved a limited tool life. After around 25 components had been manufactured, the drill head was worn out and had to be replaced. Regrinding was not possible. To limit wear, the company had to work with comparatively low cutting data, which extended cycle times and limited productivity. Especially in series production, this led to frequent tool changes and increasing costs per component.

## **More efficient thanks to multiple regrinding**

In search of a solution with a higher level of performance, Maquinaria Magnum turned to Gühring. The decisive factors were the company's reputation as a specialist in drilling and the prospect of technically sound advice. "We approached Gühring with a clear performance problem and very quickly received comprehensive technical support," says a Maquinaria Magnum manager, describing the decision-making process. The aim was to significantly increase both the tool life and the cutting data without compromising process reliability and hole quality.

Together with Gühring's application technicians, the BT 800 interchangeable drill head with Persistum coating, designed for steel and cast-iron machining, was selected. The BT 800 from Gühring is a modular interchangeable head drilling system designed for precise and cost-effective drilling processes. It combines a wear-resistant steel base body with interchangeable solid carbide drill heads that can be replaced directly in the machine. The robust interface ensures high repeat accuracy and short set-up times. The size of the chip spaces and targeted cooling enable stable processes even at higher cutting data. The system is particularly cost-effective thanks to the possibility of regrinding the drill heads up to twice, which significantly reduces tooling costs.



(From left to right) From Maquinaria Magnum: Carlos Rodríguez, Oscar López, Cristian Amador. From Gühring Mexico: Juan Pablo Andrade, Josué Ramírez, Ramiro Salazar, Israel Navarro



**40%**

shorter machining time per hole



**2x**

longer tool life



**Drill head with Persistum coating for steel machining**  
Ø-range 10.0 – 26.0 mm



**Pilot drill head with internal cooling for 4-fold cooling**  
Ø-range 10.0 – 26.0 mm



### Higher cutting data, shorter cycles

After the tool was tested in Mexico, the result was quickly clear: the BT 800 achieved a tool life of 58 manufactured components per drill head, more than double that of the competitor's tool previously used. In addition, the drill head can be subject to up to two rounds of refurbishment. Overall, the effective life can thus be further increased, which significantly reduces the cost per part. "Our tools not only deliver more parts but can also be subjected to cost-effective regrinding. This gives the customer a clear cost advantage," explains Gühring engineer Josué Ramírez. A stable process is crucial, espe-

cially when performing machining on large-volume tractor components. The BT 800 impressed with its smooth running and reliable chip removal. For Maquinaria Magnum, this means fewer unplanned downtimes and consistent component quality throughout the entire tool life. In addition to the tool life, the BT 800 impressed with a higher feed rate and a higher cutting speed. This resulted in shorter cycle times and higher output without compromising process reliability.

### Added value beyond the tool

In addition to the technical results, the customer emphasises the quality of the cooperation.

"Communication is precise and the support is very comprehensive," says Maquinaria Magnum, describing its relationship with Gühring. The first joint test was already successful and created trust for further projects. This is an important factor for Gühring: "A successful start opens the door to new applications and a long-term partnership," says Josué Ramírez. For Maquinaria Magnum, the switch to the BT 800 means a competitive advantage in a growing market and in an industry with increasing requirements for efficiency and sustainability.

### TOOL PERFORMANCE REPORT

Tool	<b>BT 800</b>	Competitor
Article number	<b>Holder: #8152, Head: #8163</b>	Interchangeable head drill
Material	<b>GGG-45</b>	GGG-45
Diameter (Ø)	<b>17.000 mm</b>	17.000 mm
Cutting speed (v <sub>c</sub> )	<b>104 m/min</b>	96 m/min
Feed rate (v <sub>f</sub> )	<b>559 mm/min</b>	340.8 mm/min
Feed (f)	<b>0.28 mm/rev</b>	0.17 mm/rev
Speed (N)	<b>1.950 U/min</b>	1.800 U/min
Tool life	<b>58 components</b>	25 components

In collaboration with:



Johannes Kromer  
Product Manager Modular Drilling Tools  
johannes.kromer@guehring.de  
Service-Hotline: 00800 2607 2607



**Double the tool life and 40 % shorter machining time per hole**

Through the night without interruption

# System 208 increases stability

**Veile Feindrehteile GmbH was facing a critical bottleneck in stainless steel machining: insufficient tool life, unstable cutting edges and unreliability in unmanned operation. However, close technical cooperation with Gühring led to a tool design that is precisely tailored to the requirements of sliding headstock turning: with the 208 parting off system, the family-owned company not only increases process reliability, but also improves its cost-effectiveness.**

In the small town of Bretten near Karlsruhe, Veile Feindrehteile manufactures high-precision components from high-grade steel, brass, steel and aluminium for the electrical industry. The components are produced on sliding headstock lathes that must run unattended for up to ten hours overnight. For Patrick Kratt, director of the family-owned company, one thing is therefore clear: tools must guarantee absolute process reliability. Any vibration, any imprecise cutting edge and any unpredictable risk to service life can cause the machine to stop – and valuable production time to be lost. However, when performing machining operations on high-alloyed, saltwater- and acid-resistant high-grade steels, the cutting tool used by a competitor showed weaknesses: the cutting edge was very sharp, which led to rapid cutting edge wear in high-grade steel. “I was dissatisfied with the tool life I achieved with the competitor’s tool,” says Kratt. “Especially during the night shift, I lacked the confidence that the machine would really run through.”

#### Convincing right from the first test

When Gühring product manager Marc Wiesner analysed the problem together with Kratt, it quickly became clear what the new tool had to deliver: maximum tool life, stable cutting edges, smooth cutting behaviour, defined flatness of the parting cut and a geometry that optimally takes into account the forces of the sliding headstock lathe. Fortunately, Gühring

had a new solution in its programme that perfectly met these requirements: the 208 parting off system.

The switch was quick, recalls Kratt: “I told the sales representative: I have a problem, I want to improve something. Do you have a solution? We drew up a sketch and angle specifications together, Gühring supplied the right tool – and right from the first test, the plate worked exactly as I wanted it to.”

#### Designed for greater stability

The 208 system combines a stable cutting edge geometry with targeted cutting edge rounding and Nano-A coating. This coating is thin enough not to distort complex geometries but has sufficient hardness and temperature resistance to significantly increase tool life, especially in high-grade steel.

For Patrick Kratt, the precise adjustment of the cutting edge rounding was crucial. A cutting edge that is too sharp produces defined edges on the component but wears too quickly in hard high-grade steel. On the other hand, a cutting edge that is too blunt increases the cutting forces and overloads the machine. The solution lies in targeted, minimal rounding.



**“Gühring supplied the right tool – and even during the first test, the plate performed exactly as I wanted it to.”**

Patrick Kratt,  
Director of Veile Feindrehteile GmbH

#### TOOL PERFORMANCE REPORT

Tool	<b>System 208, type GZ neutral</b>	Competitor
Machine	<b>Star long turning machine SR20</b>	Star long turning machine SR20
Article number	<b># 304076763</b>	
Material	<b>X 2 CrNiMoN 17 12</b>	X 2 CrNiMoN 17 12
Diameter (Ø)	<b>12 mm</b>	12 mm
Cutting speed (v <sub>c</sub> )	<b>100 m/min</b>	100 m/min
Feed (f)	<b>0.05 mm/rev</b>	0.04 mm/rev
Thread depth (a <sub>p</sub> )	<b>6 mm</b>	6 mm
Tool life	<b>1,800</b>	1,000



**Tool lives increased by 80 % and runtime per component reduced**



**80 %**

longer tool life



**24 h**

of reliability



Patrick Kratt (Veile Feindrehteile, left) and Marc Wiesner (Gühring) have jointly found the perfect cutting solution.

Gühring implements this in the System 208 with high reproducibility.

“The cutting edge must not be abrasive in high-grade steel. Thanks to the Nano-A coating and the targeted rounding, the indexable insert harmonises perfectly with the material,” explains Marc Wiesner. “The result is a smooth cut, less wear and a consistently high surface quality.”

Another important point was chip formation. The chip former of the System 208 is designed as a hollow groove and performs chip forming into a spiral-shaped “snail”. This allows the chip to fly into the chip space in a controlled manner – without frictional heat, without jamming and without the risk of chips jamming in the groove. This is crucial for a permanently stable, unmanned process. “I have no heat build-up and no problems with chips getting stuck,” confirms Kratt.

#### **Precise flatness in parting cut**

However, it was not only process reliability that played a major role for Kratt, but also the flatness of the parting cut: during parting off, the parting surface is created, which often later serves as a functional surface. It must be flat,

without any curvature or recess. The System 208 achieves a very high degree of flatness thanks to its stable projection and constant cutting forces. “My specification was to achieve flatness in the range of one to two hundredths,” says Kratt. “The tool manages this with ease – even for parts that need to be even more precise.”

For automated overnight manufacturing, the parting cut is the critical process step. If the cutter breaks or the parting cut is not complete, the machine stops. This means lost production. Since Veile started using the System 208, this fear has disappeared. “I can be sure that the cutting edge will survive the ten hours overnight. I used to have rejects after the night shift. Today, I can safely take the earnings from the night shift with me,” says Kratt.

#### **Success today, potential tomorrow**

For Veile Feindrehteile, the decision has paid off. In high-grade steel, the System 208 delivers stable processes, long tool lives, excellent surfaces and flatness in the parting cut that reliably meets specifications. In addition, thanks to the precise geometry, higher feed rates can be achieved – for a clear cost advantage. And

Marc Wiesner sees even more potential for the future, for example in brass and aluminium machining: “Our standard geometry is universal and process reliable. This gives customers like Veile the opportunity to perform different machining operations with minimal set-up effort.” Kratt draws a clear conclusion: “I now have exactly the process I wanted back then. Gühring listened, understood and implemented. For us, that is an enormous advantage.”

In collaboration with:



**Veile**  
**Feindrehteile GmbH**  
Präzision ist unser Prinzip

**GÜHRING**

Marc Wiesner  
Product Manager Grooving Systems  
marc.wiesner@guehring.de  
Service-Hotline: 00800 2607 2607



Nuclear reactor in decommissioning

# Master INOX threads with ease

**What happens to a nuclear power plant when it is no longer needed? Whereas other buildings are simply demolished, scrapped and disposed of, dismantling a nuclear power plant is much more complex: some of the huge metal components are contaminated with radiation and must be dismantled using specially developed equipment.**

When an energy supplier decommissioned a nuclear power plant, Weisser Bärwinkel was one of the first points of contact. The company, based in Maulburg (Lörrach district), develops machines that dismantle steel structures, cut equipment and even filter contaminated water. "We break down large nuclear power plants into small pieces," summarises director Michael Kern. Weisser Bärwinkel covers a wide depth of production, including laser cutting, welding, milling and assembly. Seven lathes and milling machines are available for mechanical machining operations, along with a 25-strong production team working in shifts, as well as designers and engineers.

**” This is economically interesting because I use tools for as long as they are cost-effective and can even recycle them afterwards.**

Michael Kern, director,  
Weisser Bärwinkel

## Thread tapping in demanding materials

The systems built at Weisser Bärwinkel sometimes extend over several building levels and consist of high-grade steel components. From raw water tanks and pipes to high-pressure pumps, Weisser Bärwinkel handles the manufacturing of every component itself. All components that come into contact with liquids are made of 1.4571 high-grade steel and connected via countless precisely cut threads. High-grade steel is a challenging material for thread machining, especially in qualities such as 1.4571 or 1.4404. "The chips are tough, break poorly and can get stuck, especially in blind holes," explains Michael Kern. This was precisely the central challenge in thread production. For a long time, Weisser Bärwinkel used a competitor's tool for thread cutting. However, recurring problems arose with certain components, especially in tough high-grade steel. Sales representative Oliver Mattes from Gühring recalls: "The threads have always been a big issue. It was simply a process that repeatedly caused difficulties, especially in INOX. Since we started using Pionex, the customer has had no more worries."

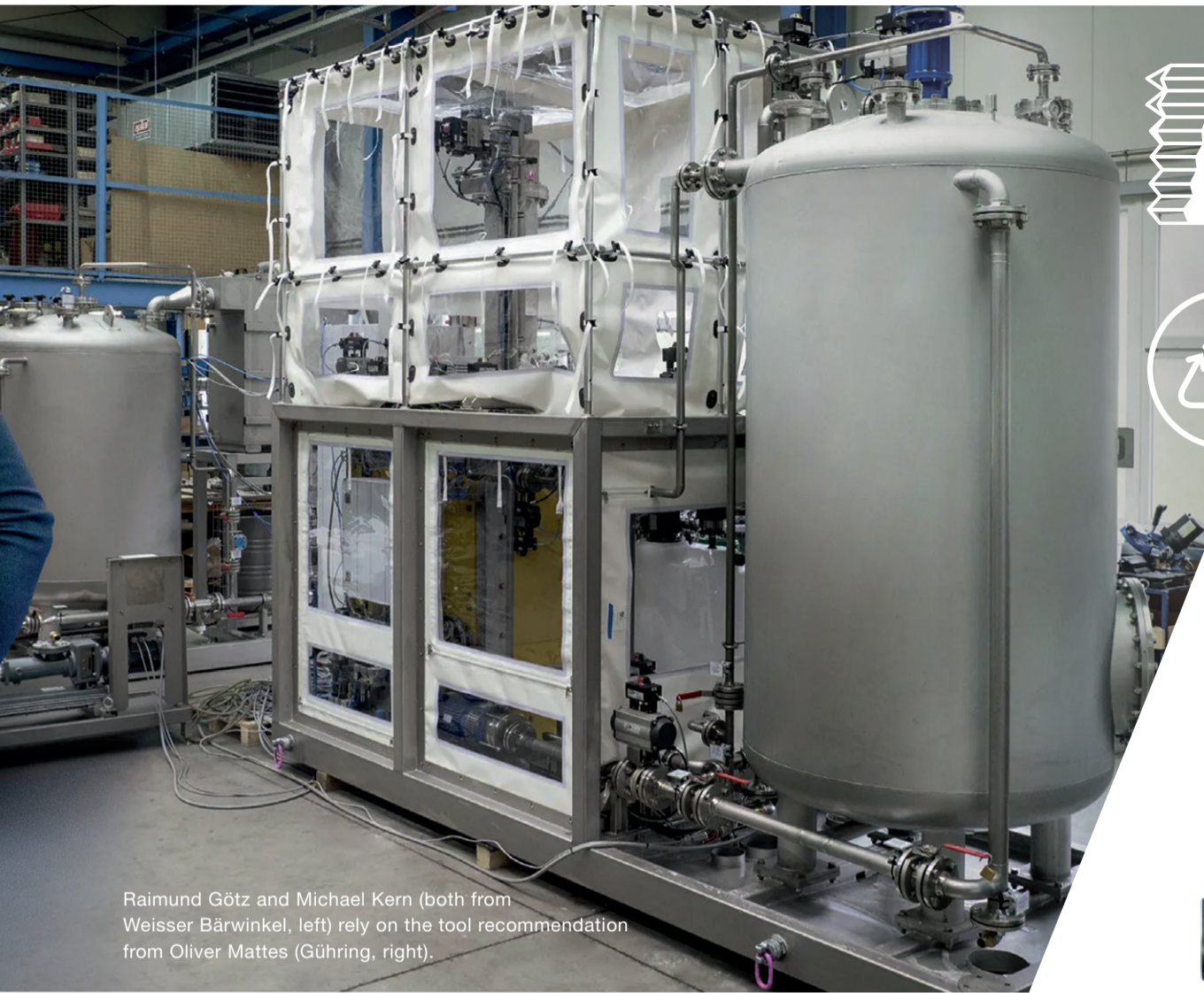
## All-rounder with a focus on INOX

The Pionex is a tap for a wide material range, optimised for high-grade steels. Its geometry reduces torque and improves chip removal – a decisive advantage with tough INOX materials. For Weisser Bärwinkel, this means fewer tool breakages, more stable processes and shorter cycle times.

The drill is available in versions for blind holes and through-holes. This allows both narrow, closed internal contours and long threaded holes to be manufactured reliably. "With the Pionex, the threads run reliably and we can work precisely," explains Michael Kern. "Process reliability has increased significantly." In addition to high-grade steel, Weisser Bärwinkel also performs machining operations on materials such as grey cast iron, mild steel and cast aluminium.

"The customer performs machining on many different materials," explains Mattes. "With the universal Pionex, we can cover all of them."





Raimund Götz and Michael Kern (both from Weisser Bärwinkel, left) rely on the tool recommendation from Oliver Mattes (Gühring, right).



**450**

threads with just one tool



**15 %**

bonus on the scrap price



# 8354 M2-M24/ Through hole



# 8330 M2- M24/ Blind hole

The tool is a powerful all-rounder and suitable for a wide material range – an advantage for operations that need to manufacture flexibly.

### High-level optimisation

Weisser Bärwinkel has been using the Pionex for over ten years now. But although the tool works reliably, Gühring has not stopped product development. Six months ago, the Pionex received a facelift. All variants were then converted in the company. The further development is particularly evident in improved cutting edge geometry, optimised chip spaces and a tool with a high level of performance. These factors are particularly effective in INOX materials, where conventional tools quickly reach their limits. "It is an advantage of Gühring that they continue to develop at a high level," says Michael Kern. "The new facelift offers me even greater process reliability. I can perform more machining operations and the tool works even faster."

### A collaboration that pays off

In addition to the tool itself, Michael Kern is particularly impressed by the excellent service provided by Gühring. "The service at Gühring is simply superb," praises M. Kern. "You can call them, the Gühring Online Shop is good, and it contains cutting data that you can use without hesitation. And if we have any questions, we get answers very quickly." The com-

pany also uses Gühring's complete tool cycle: drills and milling cutters are sent in a service box for refurbishment. Tools that can no longer be reground are collected in two yellow barrels in the manufacturing department and then sent to the Gühring recycling facilities – 150 kilograms of carbide per year. The company closes the loop completely with Tool Management and receives an additional 15% bonus on the carbide market price. "This is economically interesting because I use tools for as long as they are cost-effective and can then even recycle them," explains Michael Kern.

In collaboration with:



**GÜHRING**

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### TOOL PERFORMANCE REPORT

Tool	Pionex	Competitor
Article number	# 8330, #8354	–
Material	X6CrNiMoTi17-12-2 (1,4571)	X6CrNiMoTi17-12-2 (1,4571)
Diameter (Ø)	M2 – M20	M2 – M20
Cutting speed (v <sub>c</sub> )	10 m/min	6 m/min
Thread depth (a <sub>p</sub> )	2xD	2xD
Tool life	450 threads	350 threads



28% longer tool life with 40% faster machining

Faster, better, cheaper

# One component – major savings

**Faster, better, cheaper: anyone who wants to achieve cost-effective machining must continuously optimise their manufacturing processes. The collaboration between Gühring and ZFN Zerspanungsfabrik Nord GmbH shows the enormous potential savings that lie in choosing the right tools.**

Digitalisation and automation – that's what ZFN Zerspanungsfabrik Nord GmbH is focusing on. The Reinfeld-based company specialises in the machining and gear cutting of small series. "In order to be able to manufacture as cost-effectively as possible, even with small quantities, it is extremely important for us to identify all potential for optimisation," explains production manager Bartosz Leszczewicz. Reliable cutting tools are essential for this. For this reason, the company turned to Gühring at the end of 2024, whereupon sales representative Christoph Cleemann soon tackled the first project with the new customer: The manufacturing process for a hub connection (C45E quenched and tempered steel) on a DMG MORI CLX 450 TC is to be made faster and more cost-effective. By switching to three Gühring tools, ZFN can significantly shorten the manufacturing process – without compromising on quality.



#### High-performance drill: triple feed rates

In the first step, a competitor's 3-fluted cutter is replaced by Gühring's FT 200 U solid carbide drill for drilling holes in the component. The FT 200 U scores point with its significantly higher feed rates and better hole quality. Thanks to its optimised flute profile, the chips are tightly rolled and broken in a process-reliable manner. In addition, internal cooling with maximum coolant duct cross-section supports reliable chip removal. "Compared to the competitor's two-flute cutter, we

were able to increase the feed rate by 222 %," reports Gühring sales representative Christoph Cleemann enthusiastically. Another advantage: the FT 200 U can drill up to and including 12xD without a prior piloting process. Thanks to its spiropoint grind, the cutting edges form a funnel and enable precise spot drilling. The innovative tip geometry ensures precise self-centring. This tool not only achieves higher feed rates, but it also eliminates an entire working step. "All in all, by switching to the FT 200 U, we were able to reduce the machining time per component from 27 to 8 seconds," summarises Bartosz Leszczewicz.



#### Modular fluteless tap: 158 % longer tool life

Fluteless tapping instead of thread tapping: Thanks to this change, ZFN has reduced the machining time per component by 73 %.

"Unlike thread tapping, fluteless tapping does not produce chips that can wrap around the tool. In the past, this occasionally led to tool breakage, which is why we tested a fluteless tap for this application," explains Christoph Cleemann. The modular fluteless taps consist of an HSS shank and an interchangeable carbide thread head, whereby different shank lengths can be combined for all thread sizes between M12 and M24, depending on the component requirements. As a result, the modular fluteless taps combine wear resistance and toughness with maximum flexibility. Cleemann recommends the GühroSync threaded chuck as the perfect complement: "This chuck combines the advantages of hydro-turning and synchro tapping chucks, ensuring high concentricity and vibration damping. This not only results in more precise thread tolerances but also allows us to run significantly higher cutting parameters." And that also has a noticeable effect on tool life.

Thanks to three new Gühring tools, ZFN can significantly optimise the manufacturing process for hub connections.





### TOOL PERFORMANCE REPORT: HIGH-PERFORMANCE DRILL

Tool	<b>FT 200 U</b>	Competitor
Article number	<b>#6590</b>	–
Material	<b>Vergütungsstahl (C45E)</b>	Vergütungsstahl (C45E)
Diameter (Ø)	<b>11.2 mm</b>	10.2 mm
Cutting speed (v <sub>c</sub> )	<b>145 m/min</b>	90 m/min
Feed (f)	<b>0.55 mm/rev.</b>	0.25 mm/rev.
Speed (N)	<b>4121</b>	2809
Tool life (m)	<b>35 m</b>	20 m
Main time per component (sec.)	<b>8.47 sec.</b>	27.34 sec.

➤➤➤➤➤ **69% time reduction for each component**

### TOOL PERFORMANCE REPORT: MODULAR FLUTELESS TAP

Tool	<b>Modularer Gewindeformer</b>	Competitor
Article number	<b>#4871</b>	–
Material	<b>Vergütungsstahl (C45E)</b>	Vergütungsstahl (C45E)
Diameter (Ø)	<b>M12</b>	M12
Cutting speed (v <sub>c</sub> )	<b>44 m/min</b>	12 m/min
Speed (N)	<b>1167</b>	318
Tool life (component)	<b>904</b>	350
Main time per component (sec.)	<b>19.74 sec.</b>	72.38 sec.

➤➤➤➤➤ **Machining time per component reduced by 73%, while tool life doubles**

### TOOL PERFORMANCE REPORT: INDEXABLE INSERT MILLING CUTTER

Tool	<b>Index. inserts milling cutter</b>	Competitor
Material	<b>C45E</b>	C45E
Diameter (Ø)	<b>80 mm</b>	3.5 mm
Cutting speed (v <sub>c</sub> )	<b>150 m/min</b>	70 m/min
Speed (N)	<b>597</b>	6366
Feed rate (v <sub>f</sub> )	<b>1194 mm/min</b>	318 mm/min
Main time per component (sec.)	<b>72.38 sec.</b>	1085.73 sec.
Tool life until replacement (m)	<b>120 m</b>	10 m

➤➤➤➤➤ **Tenfold feed rate per cutting edge**

#### Profile milling cutter with indexable inserts: 10 x the feed per cutting edge

To optimise milling operations, Cleemann relies on a special tool from Gühring: a profile milling cutter with type 305 indexable inserts. The tool performs chamfering and roughing in a single working step, where previously two working steps were necessary. "Eight indexable inserts are attached to the milling body, each with three usable cutting edges, ensuring high cost-effectiveness. With this tool, we can perform machining of the material much faster and more robustly.

This enables us to achieve maximum material removal rates," explains Cleemann. The high material removal rates are particularly noticeable in the subsequent roughing process: the Gühring tool masters this in just one working step, whereas a competitor's finger milling cutter required 4-5 working steps. "Thanks to the profile milling cutter with indexable inserts, we were able to reduce the roughing time per component from 18 to 1 minute," reports Bartosz Leszczewicz.

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# BEST PRACTICE

2026



PROGRAMME EXTENSION

## System 222

**New indexable insert with INOX chip former and 2.00 mm parting width**

Gühring is expanding its successful "System 222" grooving programme with a parting off plate with a 2 mm grooving width. Thanks to its special chip former for ISO-M materials, this indexable insert ensures high process reliability, outstanding tool lives and improved surface quality when grooving high-grade steels.

You can find more information in our new brochure on System 222.



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