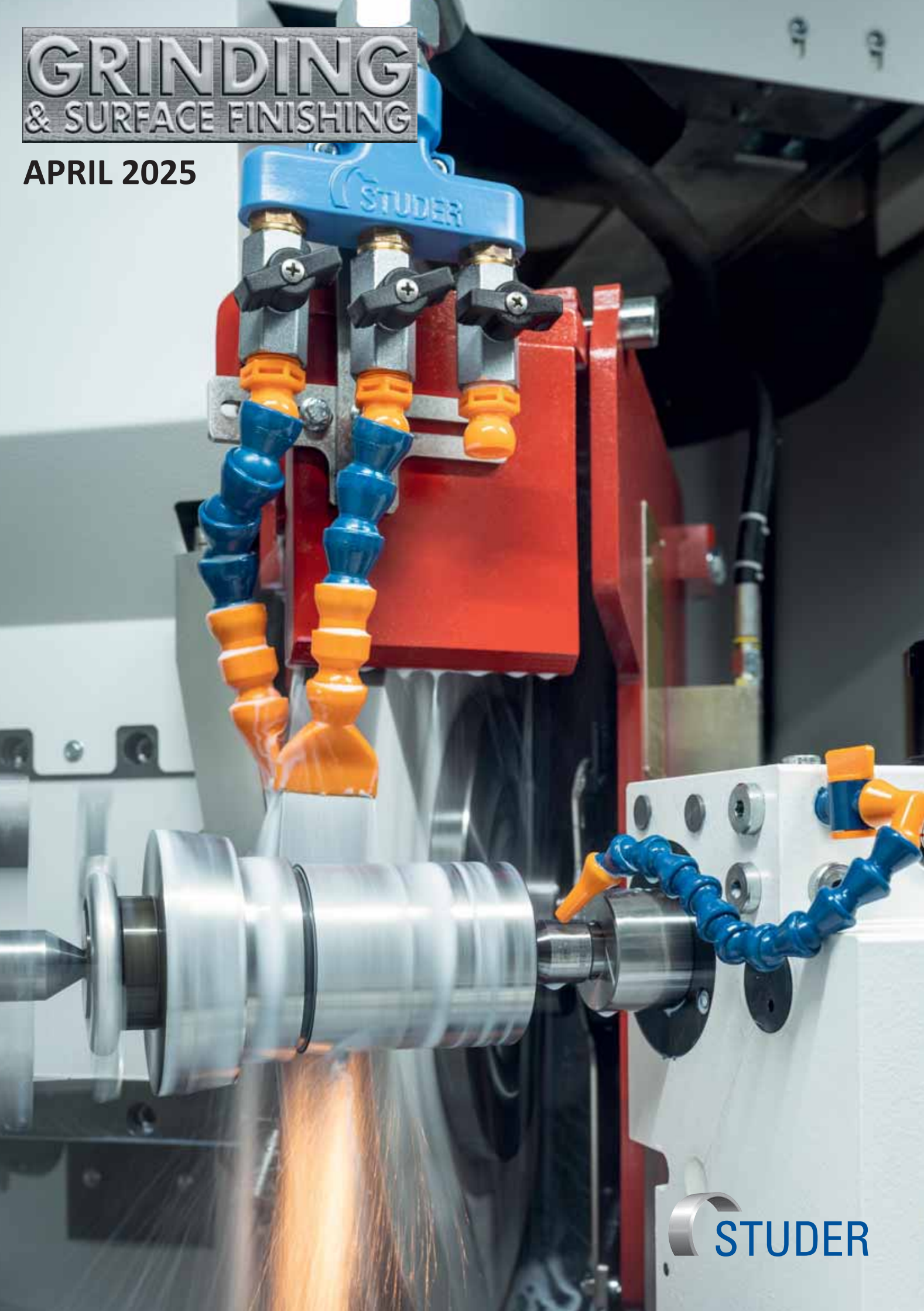


# GRINDING & SURFACE FINISHING

APRIL 2025





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## Fritz Studer AG

Fritz Studer AG, established in 1912, is a market and technology leader in universal, external and internal cylindrical grinding as well as noncircular grinding. With around 25,000 delivered systems, STUDER has been synonymous with precision, quality and durability for decades.



### Know-how and capabilities

The name STUDER stands for hardware, software, system integration and Swiss quality service. With a customised complete solution for each grinding task, the customer also receives our knowledge and know-how about the grinding process. The STUDER logo has been a seal of quality for first-class results for decades. We ensure that The Art of Grinding remains closely linked to our name in the future. STUDER has over 111 years of experience in the development and manufacture of precision cylindrical grinding machines.

### Highlights include:

- Expertise and practical experience in high-speed and form grinding.
- Fully automatic grinding systems (including loaders, measuring systems, special clamping systems etc. from many different manufacturers).
- "Granitan" machine bed – a pioneering role in the manufacture of mineral castings.
- Around 100 staff in research and development for machines, software and user-specific problem solutions.
- Own technology center for tests and grinding trials (also for preliminary clarifications and definition of customer processes and grinding technologies etc.).
- Worldwide sales network.
- Comprehensive service provider, consultation and service with around 100 staff, active in Switzerland, Germany, France, Italy, Great Britain, Turkey, Japan and China.
- Own training centre for the training of customers and representations on all STUDER products in at least four languages.
- Traditionally proven approach based on a strict quality codex, combined with state-of-the-art methods (ISO 9001, VDA6.4).

STUDER and the SCHAUDT and MIKROSA brands together represent the cylindrical grinding technology group within UNITED GRINDING Group.

UNITED GRINDING Group is one of the world's leading manufacturers of grinding, eroding, laser, and measuring machines, as well as machine tools for additive manufacturing. With roughly 2,300 employees at more than 20 manufacturing, service, and sales locations, the group is organised in a customer-oriented and efficient way.

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# BEP Surface Technologies welcomes a boost for UK Engineering

## Electroplating expert among 23 companies led by Surface Engineering Association to gain regulatory edge, as EU Chrome 6 restrictions loom

BEP Surface Technologies has hailed a government decision to permit the use of chrome-plating chemicals as a "significant vote of confidence in UK engineering".

The Radcliffe-based electroplating expert is part of a consortium of 23 companies, led by the Surface Engineering Association (SEA), that has secured a crucial 12-year authorisation from DEFRA for the continued use of Chromium Trioxide and Chrome 6.

The authorisation explicitly covers the hard chromium electroplating of engineering components, ensuring that BEP can continue providing high-performance coatings vital to key sectors such as manufacturing, aerospace, nuclear, packaging, defence, automotive and precision engineering.

Crucially, the decision provides long-term regulatory certainty, safeguarding businesses, jobs and the broader UK manufacturing supply chain.

Andrew McClusky, managing director at BEP Surface Technologies, emphasised the significance of this decision: "This represents a paradigm shift for BEP and the entire industry. The past decade has been fraught with uncertainty, and this decision enables us to concentrate on innovation, investment and providing top-quality solutions for our clients. Securing this 12-year approval was vital for various industries that depend on our expertise in surface engineering. This is a significant vote of confidence in UK engineering."

Chrome 6's unmatched durability and precision make it vital in various applications,



Plating roll at BEP factory.

including chrome plating for manufacturing and heavy industries, stainless steel production, textile dyes, pigments, corrosion inhibitors and leather tanning.

However, it has faced heightened regulatory scrutiny due to its toxic and carcinogenic characteristics, considering the health risks and environmental impact.

Brexit reshaped the UK's chemical regulations, particularly impacting the surface engineering sector's use of chromium VI (Chrome 6). Previously governed by EU

REACH, the UK established UK REACH, overseen by DEFRA, which introduced different timelines and authorisation processes. Meanwhile, the EU is moving towards stricter restrictions, aiming to limit Chrome 6 to "essential use" only. This divergence strengthens UK companies, ensuring continued supply chain stability while EU manufacturers face uncertainty.

The SEA REACH consortium was pivotal in securing this authorisation, which aims to navigate a balance between safety and industrial innovation.

The consent requires strict adherence to safety and environmental conditions, including air and biological monitoring, exposure control measures and risk management improvements. Companies must also comply with specific requirements, such as monitoring personal exposure and enhanced protective measures for workers handling chromium trioxide.

David Elliott, chief executive of SEA, says: "This is a landmark achievement for the UK surface engineering sector. The SEA REACH Consortium was established in response to



Andrew McClusky managing director BEP Surface Technologies.



David Elliott, Chief Executive of SEA.

an urgent need for regulatory clarity. In an incredibly short time, we have navigated a steep learning curve to deliver an outstanding outcome.

"This endorsement gives our industry the business certainty we need and guarantees ongoing compliance with rigorous environmental and health safeguards. We have obtained six consents, with one additional decision awaiting, illustrating what can be accomplished when an industry unites to tackle a shared challenge. Without this approval, we would have encountered significant disruptions across the UK supply chain. Companies faced significant operational disruptions, possible closures and financial losses estimated at £35.7 million."

While the industry celebrates this milestone, concerns persist regarding the regulatory process. A recent Best Available Techniques (BAT) workshop aimed at preventing or reducing emissions and environmental impacts has underscored a lack of sector-specific expertise within government bodies.

David Elliott adds: "Companies in our industry that operate without the required regulatory approvals and proper due diligence

will encounter intense scrutiny and the risk of shutdowns."

The decision also positions UK companies like BEP Surface Technologies ahead of their EU counterparts, who still face regulatory uncertainty.

The European Commission has asked the European Chemicals Agency (ECHA) to prepare a report on Chrome 6. The goal is to restrict its use to only "essential" purposes. The deadline, originally set for October 2024, has been pushed to April 2025.

Andrew McClusky comments: "With many companies applying for individual agreements, ECHA is overwhelmed, leading to concerns about restrictions that could significantly impact European manufacturers.

"This decision places UK companies in a significantly stronger position than their EU counterparts, where uncertainty continues to disrupt business planning. BEP Surface Technologies and other UK firms can now proceed confidently while many of our European counterparts remain in regulatory limbo."

BEP Surface Technologies specialises in



Plating roll at BEP factory 2.

electroplating, metal finishing and coating. Based in Radcliffe, Greater Manchester, the 54-year-old company works with hard chrome, nickel and copper. It serves engineering and manufacturing, energy, nuclear, defence and packaging industries across the globe. BEP is certified 'Fit For Nuclear' and holds ISO 9001, 14001 and 45001. For more information visit [bep-st.com](http://bep-st.com)

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**<https://bep-st.com/>**

## Kellenberger becomes Kellenberger Switzerland

Kellenberger AG, with headquarters in Goldach, Switzerland, has separated from the Hardinge Group and will operate as Kellenberger Switzerland AG in the future. In addition to the renowned Swiss brands Kellenberger, Voumard, Hauser and Tschudin, which cover internal-external and jig grinding, the brand USACH will be integrated, which is known for customer-specific precision solutions in the grinding sector.

The portfolio of the Kellenberger Switzerland AG will also include the hard turning and grinding machines of the brand Super Precision, which has been well-known to demanding customers for decades and specialises in the development of process-oriented solutions, e.g. for the manufacture of high-precision tools and toolholders. All brands will utilise



the worldwide Kellenberger sales and service network, which guarantees the necessary customer proximity in every case of need.

Its philosophy is driven by an unwavering commitment to precision and quality. It aims to deliver the best machine configurations and machining solutions, ensuring maximum value for its customers.

**UK agent**

**DF Precision Machinery Ltd**

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**In Memory of David Arthur,**  
who lost his battle with leukaemia last November '24.

David was the owner and chairman of Delapena Group.

He inspired and mentored generations of engineers throughout his long and established career.

We grieve not only for the loss of an exceptional gentleman, our chairman and friend, but also for the heartache his family are enduring.

We offer them our deepest condolences and unwavering support.

The team at Delapena

# Three advantages of using WALTER machines for medical CNC machining

The WALTER line of HELITRONIC tool grinders provides a complete range from general purpose tool grinding machines to micro tool grinders, all of which answer complexity with accuracy. They're a surefire way to boost the precision and profitability of your business.

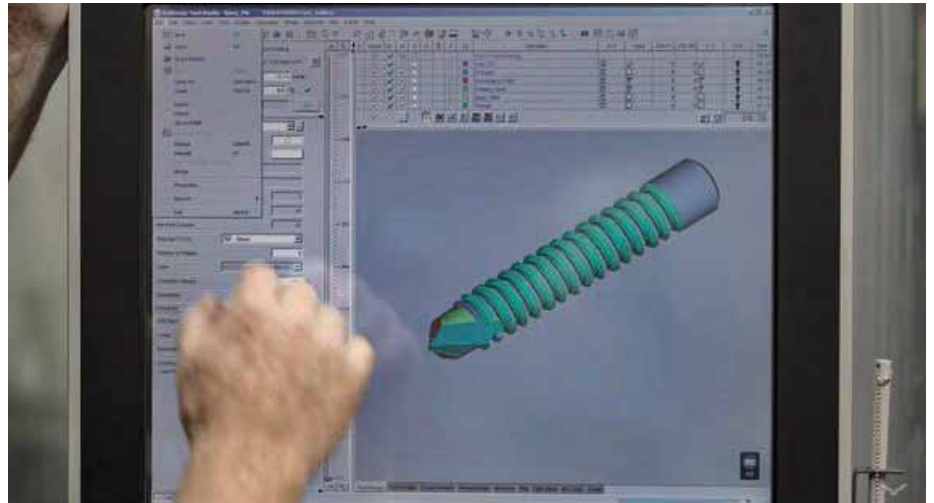
That top-to-bottom precision is especially useful in the medical industry, where small parts like medical tools, cutting tools and bone pins and larger parts like knee or hip replacements all reside. No matter what medical part you're machining, there's probably a WALTER machine for it.

### The HELITRONIC and HELICHECK one-two punch

For cutting tools, bone pins and other small medical parts, take a look at the HELITRONIC MINI PLUS. This machine excels with small to medium diameters, up to 20 mm. Be sure to pair the machine with automation if you want to be floored by the production capability.

Shops producing larger parts like knees, hips and other longer pieces would do well to examine the HELITRONIC POWER 400 L. This linear drive machine is ideal for the high precision production of parts with complex geometries.

Meanwhile, the HELICHECK line of inspection equipment takes care of pain



*Grinding Bone Pins from Titans of CNC.*

points the medical industry often has. The HELICHECK PLUS optically scans 3D imaging of medical parts, easily verifying the work you're producing and doing it in less time.

### The HELIOTRONIC TOOL STUDIO software

WALTER's popular software simplifies the design and grinding of bone pins, bone screws, skull drills, bone reamers and whatever other tools you need to produce.

Design, programming, simulation and production are all handled by this powerful

conversational software. Thanks to the interplay between the HELIOTRONIC TOOL STUDIO software and HELIOTRONIC CNC control, it's easier than ever to grind complex medical tools in a single clamping.

### The 6-axis FANUC robot

Talk to a WALTER customer and they're likely to tell you what they think is the biggest advantage: no one competes with the UNITED GRINDING robot.

If flexibility is what you're after, you'll be thrilled with the FANUC robot that can be paired with WALTER equipment. There are many different setups ready to be used, including on knees where the body replacement part is loaded on an HSK arbour and then loaded into the machine.

For drills, it uses a cylindrical loader where it moves them from pallet to collet. The robot loader teaches itself, which means you don't have much setup time. You can have four different shelves inside the robot, which can yield up to 500 parts per pallet for small diameters. That's a whole lot of tools.

Overall, the robot is incredibly easy to use. Typically, when you have something easy to use, you sacrifice flexibility. But the two have been merged so you can quickly do many types of parts and tools.

### Ready to produce world-class medical tools and parts? Time to talk to WALTER

The entire WALTER lineup contains perks and advantages that have not been listed in this article. It's a truly special machine family and



that claim quickly cements itself as fact after you've spent a bit of time with your tool grinder.

Reach out any time to talk about your application and get it paired with the ideal WALTER tool grinder. It'll be one of the best moves you make this year.

### Tool measuring applications

Manufacturers around the world depend on extremely precise metal cutting tools, which means the suppliers of those tools must meet and surpass even higher standards. That's why tooling OEMs rely on UNITED GRINDING for world-class measurement equipment designed specifically for the cutting tool industry.

Designed to meet the exacting standards of Germany's national metrology institute, the Physikalisch-Technischen Bundesanstalt, the WALTER HELICHECK series of optical measuring machines can handle today's most complex rotationally symmetrical tools. These machines are certified for sub-micron accuracy and  $>1.5\ \mu\text{m}$  repeat accuracy and additional fourth CNC axes and laser sensors also allow for even greater precision along with full 3D scans with the most advanced HELICHECK technology. WALTER also offers



manual measuring machines, including HELISET for tracking grinding wheel shape and HELISET PLUS for measuring complex tools prior to erosion processes.

The HELICHECK ADVANCED optical CNC measuring machine measures even complex geometries of rotationally symmetrical tools with a repeatability of  $1.5\ \mu\text{m}$ . The three cameras in the measuring machine ensure 100 percent control of the tools. Measure your

tools fully automatically, hands-free and in a highly precise manner and check all parameters on your tools.

The fully automated HELICHECK PRO measuring machine is used in the macro area. It can handle tools with a diameter range from 1 to 150 mm in the macro area, a machining length up to 330 mm and a tool weight of up to 25 kg. The CNC-based HELICHECK PRO measuring machine is a particularly ideal solution for fully automatic complete measurement of complex geometries. With certified accuracy, it sets standards for ensuring productivity, quality and precision in modern tool production. In automated tool processing, it assumes the key function of in-process "quality control," including built-in tolerance compensation.

WALTER is a leader in tool grinding technology, with an extensive product line that includes the HELITRONIC VISION tool grinder, featuring linear/torque motors in all axes and the HELITRONIC POWER universal CNC tool grinder.

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**[www.grinding.ch](http://www.grinding.ch)**

## Precise and innovative grinding tools for certified processes in medical technology

Economical system solutions for implants, surgical instruments and dental products. Medical technology places the highest quality demands, not only on the end product, but also on the production processes.

Tyrolit provides you with highest performance tools and process consultants with which you can safely put your certified or validated machining processes into practice. As a global system provider, its solution portfolio includes cutting and grinding tools as well as finishing tools for machining artificial knee joints, hip joints, implants, hypodermic needles, surgical instruments such as scissors and scalpels and dental products.

Its high-performance tools enable you to achieve reproducible, consistent quality in high-precision machining of a wide range of materials such as titanium, nitinol, cobalt-chromium and stainless-steel alloys or ceramics.

The machining time for profile grinding a knee implant with a GENIS-2 grinding wheel from Tyrolit is 4:30 minutes.

Artificial hip joint implants require a surface



finish of  $Ra < 0.005\ \mu\text{m}$ . This is generated with pre-polishing sleeves from Tyrolit.

Hypodermic needles for insulin pens have a diameter of 0.23 mm. The tip is grinded burr-free with our grinding wheels.

In 2020, 235,200 hip surgeries were performed in Germany. Tyrolit supplies tools for honing hip implants of all common materials.

The surface quality and geometry requirements of orthopaedic metal alloys are very high. With Tyrolit, you have a partner for process-stable cutting, grinding and finishing applications at your side to significantly reduce machining times and process steps. Whether cool grinding for knee or hip prostheses, efficient scalpel sharpening or

perfect finishing of complex surfaces Tyrolit offers you a comprehensive range of applications.

### Advantages include:

- Globally active partner with subsidiaries worldwide
- Certifiable, high-precision system solutions for reproducible quality
- High efficiency and increased productivity
- Global and local team of application engineers
- High delivery capability

**Tyrolit UK Ltd**

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**[www.tyrolit.com](http://www.tyrolit.com)**

# Surgical implant and medical device precision surfaces

At the Medical Technology UK event in March, Fintek showcased how automated mass and super finishing technologies are advancing the precision of implant and medical device surfaces.

The medical industry demands continual surface improvements to ensure the safety and effectiveness of surgical instruments, tibias, femoral shafts, prosthetic sockets, bone screws, bone plates and more. Precision surface finishing is a vital post-process in their manufacture. It enhances the performance, safety and lifespan in use.

Fintek is the exclusive UK agent for the sales of OTEC Präzisionsfinish GmbH drag finishing and electro-chemical finishing machines. Two technologies that excel at automating in-house medical device finishing. Compact and low capital outlay means their return on investment is quickly realised. The company also provides a full subcontract service and an experienced technical team using the latest equipment from OTEC.

With over 40 years' experience in medical engineering, aerospace, F1 and other precision industries, Fintek brings a depth of knowledge to surface finishing. Medical devices and implants made from stainless steel, cobalt chrome, titanium and ceramics can reach surface smoothness values to Ra 0.01µm. Using advanced drag finishing and electro-chemical technology, this is achieved quickly, with repeatable precision and quality.



Inconsistencies often associated with hand finishing are eliminated.

Improving surface finishing significantly improves the biocompatibility of medical devices, by creating a smoother and more uniform surface. Especially important for implants and prosthetics in contact with body tissues for extended periods. A smoother surface is less likely to harbour bacteria so lowering risks of infections in surgical settings.

Medical devices are often in contact with bodily fluids and sterilisation processes. Smoother surfaces enhance corrosion resistance, ensuring they remain durable and safe over time. Surface smoothness also





lowers friction and improves wear resistance, extending implant lifespan and maintaining the device's effectiveness. Surface finishing also enhances mechanical properties such as fatigue strength, ensuring devices withstand the stresses they encounter within the human body.

Fintek also provide other ranges of OTEC machines and processes such as disc finishing and stream finishing which can be used in medical applications. To help you realise surface improvements, Fintek technicians will advise on the best machine and process to optimise surface quality, cost effectively.

The company has brought together workpiece superfinishing methods into a one-stop shop for precision engineers. It uses leading German made OTEC mass finishing and super finishing equipment and as OTEC's official UK agent, it is able to draw on the company's in-depth surface engineering knowledge gained from designing and building metal component finishing systems to global engineering and manufacturing companies.

It sells the metal surface finishing process, including machine, process media,

installation, support and training. It can also finish your parts for you as a subcontract service, saving you the capital outlay. It is certified to ISO9001 and EN9100.

For more than 40 years', Fintek has helped customers in aerospace, autosports, automotive, medical device and other precision industries, to improve component surface quality for better part performance.

### Full inspection and quality control

The well equipped inspection, measurement and quality control lab ensures all micro finished and polished components meet the exacting standards agreed with you.

Founded in 1996, OTEC Präzisionsfinish GmbH has grown from a small manufacturer of polishing machines to become a global supplier of high precision automated mass finishing machines. Its administration, research and development and production facility in Germany covers some 8,000 sq metres. A process of continuous development and a highly skilled workforce have constantly expanded the areas of application for OTEC's equipment throughout aerospace,



autosport, medical device, toolmaking, jewellery manufacture and other precision engineering industries.

Fintek have been exclusive UK agents for OTEC in the UK from the availability of the first-generation machines in 1996 and are proud to use its advanced disc, drag and stream finishing machines to offer comprehensive subcontract services.

**Fintek**

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**www.fintek.co.uk**

## Medical precision grinding

Many medical components require surface and centreless grinding to precisely reduce the size, shape, or finish of components. TE employs multiple processes, configurations and orientations to satisfy simple and complex grinding requirements with extreme accuracy and speed.

Precision grinding allows small-dimension parts to fit and function together in complex, tight-tolerance devices. TE is at the forefront of grinding technologies and offers advanced methodologies to grind parts made from solid and tube stock.

### Electrochemical grinding

Electrochemical grinding is a highly suitable option for small, intricate parts because it diminishes the size or existence of burrs that often accompany conventional methods. TE features electrochemical grinding that combines electrolytic action and abrasive grinding for a precise, burr-free output. Its low-stress operation minimises contact to avoid potential cracking, heat distortion and other metallurgical damage often found when using conventional grinding machines. Its process is limited to metals that are



conductive, such as stainless steel, titanium, nickel alloys, nitinol, copper and aluminium. Using fixtures produced in-house, it can hold tolerances of  $\pm 0.001''$ ,  $0,0254$  mm.

### Centreless grinding

Centreless grinding is a spindle-free method that removes outside material from a part while maintaining its specific diameter and shape. TE uses a variety of grit wheels to grind standard ID-size stock down as a cost-efficient route to creating custom OD tube sizes for customers. Depending on raw material starting size and composition, it can offer tolerances as tight as  $\pm 0.0002''$ ,  $0,0508$  mm, wall thicknesses as small as  $0.0015''$ ,

$0,0381$  mm and OD surface finish as smooth as  $6$  Ra.

### CNC grinding

The pointed tips used in medical applications must have precise edges and flawless surfaces to maximise patient comfort. TE employs a broad range of geometric techniques to produce tips for:

- **Trocars:** feature a three-sided grind on solid wire, with grinds generally oriented  $120^\circ$  degrees from one other
  - **Lancets:** consist of two-side grinds on a triple-ground needle
  - **Custom complex needle tips:** including five-sided grinds on complex cutting tips
- TE also has the capability of utilising CNC grinding technology to remove outside material on wires and rods:
- Multi-tapers.
  - High-complexity grind profiles.
  - Ground length tolerances  $> \pm 0.005''$  ( $0,127$  mm).

**TE Connectivity**

**Tel: 0035 391 53 238**

**www.te.com**

# Customised production and precision grinding

NORMTEILWERK ROBERT BLOHM means high-level expertise in the production of precision parts. This specialisation clearly sets the mid-sized enterprise based in Büchen in the north of Germany apart from standard parts production and ensures its position as a reliable partner for individual customer solutions. Its primary focus lies in the precision production of complex components in compliance with the highest quality standards.



Customised manufacture, with a rapidly growing share of total sales in recent years, plays a key part in BLOHM's product and service portfolio. Unique selling points are the high level of vertical integration and customer proximity related with the production site in Schleswig-Holstein. "Our strength is found in the full production chain that we can map in-house, from turning and hardening to precision grinding and final measurement," explains Mathias Marbs, sales representative at BLOHM. This comprehensive approach allows the company to efficiently and precisely produce not only mass production parts such as bushings and bolts, but also highly complex customised components for customers from various industries.

The advantage for customers is obvious: they benefit from an integrated production process that covers all relevant steps. This allows production time to be reduced, precision of the end products to be continuously checked, documented and, if necessary, improved. "Our technologically advanced machinery, along with the expertise of our employees, are the basis of customised production at BLOHM," emphasises Mathias Marbs. "In doing so, we are creating the conditions for vertical integration that is unrivalled in the industry."

Precision grinding take centre stage at BLOHM. This technology is crucial to achieving the high levels of accuracy required



by customers. "In the field of precision grinding, tolerances in the  $\mu$  range is our daily business," explains Mathias Marbs. "It's the prerequisite for achieving the high levels of precision required by our customers." This high level of accuracy is particularly important in demanding industries such as machine construction, drive technology and aerospace.

Technical equipment and modern machinery ensure that even the most complex components can be processed with the highest precision. The quality of sanding processes is guaranteed by high-precision measuring technology in the QA department. Regular maintenance of production facilities and defined inspection batches guarantee that the high quality remains constant throughout the entire production process.

Besides state-of-the-art production technology, the high professional competence of our employees is another key success factor of BLOHM. "Our specialists are essential when it comes to meeting our customers' needs," emphasises Mathias Marbs. The company is therefore focussing on training and continuous qualification of its employees. "We generally train our specialists ourselves and ensure that their knowledge is always up to date through regular training programmes."

While doing so, BLOHM pursues a long-term approach. Expertise and experience of employees is seen as valuable resources that need to be continuously

encouraged and developed. This knowledge, in combination with state-of-the-art technical equipment, allows BLOHM to successfully realise even highly complex customer projects.

One example of a particularly demanding customer solution is the production of high-precision worm shafts. To do this, a blank is first turned, whereby high-precision centring has to be maintained. Then it is hardened and cylindrically ground before being shaped into its rotor profile using a special grinder. Particularly important is a so-called first part approval required for each production step. This entails that once the respective machine has been set up, an initial part is manufactured that has to be approved by quality control before series production can begin. This procedure ensures that component quality is maintained in series production and the reject rate is kept to a minimum.

Such projects illustrate the innovative strength and technical expertise that BLOHM introduces to customised production. "The challenge of such projects lies in the combination of high complexity and required precision," says Mathias Marbs. "But it is precisely tasks like these where we can bring to bear our strengths in full."

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# Details make Perfection and perfection is not a detail

*(Leonardo da Vinci)*



It is a principle that we have been applying to all our grinding machines for over 100 years. We design customized centerless grinding solutions that stand out for their innovation and great attention to details. We always guarantee grinding processes to the “micron”, and perfection is not a detail.



**GHIRINGHELLI**  
Centerless Solutions

**Rettificatrici Ghiringhelli S.p.A.**

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# Showcasing PTG Holroyd Precision's British-built technologies at CIMT 2025

PTG Holroyd Precision, the UK-based manufacturer of ultra-precise helical rotor and gear milling and grinding machines, will be showcasing its machine tool technologies at CIMT 2025, the 19th China International Machine Tool Show.

CIMT is widely seen as the largest, most influential professional machine tool exhibition in China and, by visiting its stand, delegates looking to produce some of the world's most accurate helical components will be able to find out more about PTG Holroyd Precision's gear, rotor, screw and thread milling and grinding machines.

"PTG Holroyd Precision machine tools are already widely used by Chinese refrigeration and air compressor manufacturers," comments sales director, Mark Curran. "This is largely due to their uncompromising levels of accuracy and reliability, as well as innovative features that make them exceptionally efficient to use.

"At CIMT 2025, we look forward to showcasing the latest models to join our machine tool line-up. These include our newly launched HG500, a machine that is quite possibly the world's most versatile, large capacity helical profile grinder; our HG350-WG worm and gear grinding centre and our recently upgraded TG Series of thread grinding machines. Visitors to stand E1-A011 will also be able to find out more about other recent machine tool innovations from PTG Holroyd Precision, such as our dual-capability roots-type blower and helical rotor milling machines."

### **HG500: incredible flexibility in helical rotor production**

The clear focus of the show from PTG Holroyd Precision's perspective, however, will be its newly launched HG500 model, a machine developed to meet the needs of manufacturers with incredibly varying production requirements. Able to accommodate the largest, most energy efficient helical profiles, the HG500 will rough



and finish grind rotors of as little as 50 mm in diameter, right up to a maximum 510 mm in diameter, 130 mm profile depth and 1,500 kg in weight. In standard form, the HG500 can utilise either a 500 mm vitrified dressable aluminium oxide grinding wheel for maximum flexibility in production strategies and product development, or use plated CBN roughing and finishing wheels for cost-effective volume production. Alternatively, for manufacturers who precision-grind the largest of helical components, a 600 mm vitrified dressable aluminium oxide grinding wheel option is available for maximum wheel life.

### **Redesigned from the ground up**

Another PTG Holroyd Precision machine that is certain to generate considerable interest at CIMT 2025 is the company's 4EX-R-BL roots-type blower and helical rotor milling machine. Newly updated, this dual-capability model now features a totally redesigned machine bed and worktable to enable components of up to 450 mm in diameter to be milled. Both the bed length and bed width have also been increased to give greater support against increased cutter forces. While further supporting the machine's greater milling capability, the original 4EX could produce parts of up to 420 mm in diameter, the machine bed height has been lowered by 150 mm, with additional buttress

supports providing increased stability during flute milling on what was already an incredibly robust and steady machine. The maximum cutter width has been increased from 320 mm to 400 mm to accommodate particularly large rotor profiles, with Holroyd's HSK 160 cutter spindle interface providing additional cutter rigidity.

"All in all, we've a great deal to present to visitors at CIMT 2025," adds Mark Curran. "The PTG Holroyd Precision name has long been a benchmark for

superior milling and grinding technologies amongst screw compressor and rotor manufacturers and we look forward to showcasing our very latest British-built innovations in Beijing."

Incorporating the brands of PTG Holroyd, PTG Powerstir Friction Stir Welding and Holroyd Precision Rotors, PTG has established itself at the forefront of high-precision machine tool design, build and supply for specialised applications. The range includes advanced machine tools for the production of complex helical components such as compressor rotors, pump screws and high-accuracy gears and Powerstir machine tools for friction stir welding advanced alloys used in transport applications.

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# Quantum leap in accuracy

Röhm GmbH looks back on a history of more than 100 years as a manufacturer of tool and workpiece clamping systems. During these years the company has grown steadily and today serves international markets with three production facilities in Germany and 1,300 employees worldwide. At the main German plant in Sontheim/Brenz, 750 employees primarily manufacture technology-oriented system solutions for sectors such as the automotive industry, mechanical engineering, aerospace and many others on 41,000 square meters. The parts in question are finished on Kellenberger Premium grinding machines.

Of all things, it was an internal crisis which brought a decline in sales, taking Röhm to the abyss for the first time in the company's long history. After several difficult years, the acquisition of the company by Austrian investor Helmut Rothenberger Group in September 2017 brought the return to calmer waters. Member of the group Gerhard Glanz took over both as CEO and co-partner at Röhm. In his view, the company's portfolio fitted perfectly with the existing business areas of the Rothenberger Holding, which generates a sales volume of 1.3 billion Euros with over 100 operating companies, many of them in the machine tools sector.

Applying an extensive restructuring project, Gerhard Glanz achieved the "turnaround" within a few months. He restored confidence both among employees and customers and brought Röhm back into the profit zone. In order to make the company fit for the future, an investment sum of several million euros was made available, which flowed in new machinery and systems. The aim for the future was to produce Röhm's high-tech products in even better quality and at the same time more cost-effectively.

For division manager Alexander Scheitenberger and his 35 staff members, the investment came exactly at the right time. Scheitenberger's department manufactures



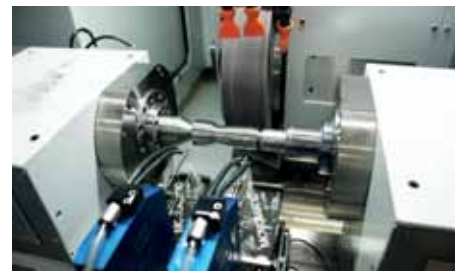
Division manager Alexander Scheitenberger (to the right) and Erhard Bader, head of production, are very satisfied with the decision for the K100.

tool clamping systems, 40 percent of which are customised special designs. A trained industrial mechanic, Scheitenberger has been with Röhm since 1990 and is very familiar with all machining processes and the Röhm portfolio.

The parts were being machined on a KEL-VARIA universal grinding machine with centre width 1,000 mm, which had been in use for 18 years. Now spare parts for key components were no longer available, making a replacement investment unavoidable. Scheitenberger and head of production Erhard Bader agreed, that the new machine should again be a Kellenberger: "We have had very good experience with the KEL-VARIA. The reliability, accuracy, and process safety of the machine over the runtime were outstanding. In addition, the cooperation with Kellenberger has always been characterised by a high level of professionalism. Erich Ziegler, the Kellenberger area manager who is responsible for us gave us excellent advice on the new procurement." Since 2018, the Kellenberger product portfolio has offered two machine designs, which can meet the machining tasks at Röhm. The new KELLENBERGER 100 platform concept proved to be the best solution, especially since Swiss manufacturer Wenger had specially adapted an automation to the machine.

### Versatile platform solution

The task assigned to the engineers in St. Gallen, Switzerland, in regard to the KELLENBERGER 100 was to develop a platform on which different machine concepts could be realised with a strong customer orientation. The segment of high-performance, low-cost grinding machines within the group was integrated into the concept. The modular solution on a common platform and a new assembly concept to reduce throughput time enables cost-efficient production of the machine and thus a very



Machining with RÖHM high-precision centres on the Kellenberger 100.



Interior of the WeFlex loader with line gantry and pallet changer.

good price/performance ratio. The machine concept was optimised in close cooperation with the service department. This resulted in speeding up maintenance and service processes and better accessibility to maintenance-intensive components.

The Kellenberger 100 offers the widest range of standard configurations for a great variety of grinding operations. The machine is available in centre widths of 1,000/600 mm with centre height 200 mm and is designed for part weights of up to 150 kg. A higher drive power for the grinding wheel, 11,5 kW, ensures increased productivity, while the newly-designed guide in the Z-axis brings greater profile accuracy. For higher accuracy in non-circular grinding, the C-axis is equipped with a direct drive. Röhm opted for a machine with a centre width of 1,000 mm.

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# Introducing the new favoritCNC from Studer

### The affordable choice with even more performance

Studer has further developed the globally successful CNC universal cylindrical grinding machine favoritCNC, incorporating years of grinding and mechanical engineering experience. The result is modern grinding technology with high precision and simple operation for a very good price-performance ratio.

"With numerous new features, optimisations and automation capabilities, the favoritCNC is a future-oriented, economical solution for the external and internal cylindrical grinding of small to medium-sized workpieces in individual and series production. Both for high-quality contract manufacturing and in-house production," says Sandro Bottazzo, CSO at Studer. The Swiss quality manufacturer of cylindrical grinding machines has further developed the proven entry-level machine, drawing on its many years of experience. Manufacturing companies now have a modern CNC universal cylindrical grinding machine whose advantages include high accuracy, short machining times and intuitive operation for a cost-effective investment

The latest generation of the favoritCNC features a modernised CNC control (FANUC Oi-TFP), software and smart automation capabilities. Thanks to the new automatic operating door and loader interface, customers can now automate their production themselves.

Further optimisations have been made regarding its operation with a view to sustainability and efficiency and in ergonomics for even easier and safer operation. For example, user-friendliness is significantly increased by the simple grinding wheel changing aid and park position for the tail-stock within the machine, optional. The new features also include the machine base with a larger distance between the X-guideways for even greater wheelhead stability, a resource-saving belt spindle system, the digital display of the swivel angle on the manual B axis and the optional QuickSet function for exceptionally fast retooling.



### Flexible application options and high-quality components

When defining the equipment on the new favoritCNC, Studer focused on flexibility, which is particularly important for customers in this segment. There are two wheelhead variants to choose from: a fixed wheelhead for productive external grinding, manual positioning 0°/15°/30°, or a universal wheelhead for external and internal grinding, grinding in one clamping, manual swivel 2.5° Hirth coupling. There are also numerous configuration options, such as a fixed or swiveling worktable, or options such as measuring and balancing systems, grinding detection, and longitudinal positioning. This means the machine can also be subsequently retro-fitted for different grinding tasks and production conditions.

With the favoritCNC, customers benefit from an optimal interplay of hardware and software and Studer's expertise as a quality manufacturer of innovative cylindrical grinding machines with a history stretching back 112 years. As a result, the machine contains high-quality components and modern and reliable grinding technology. For example, the workhead, grinding spindles, guideways and drives meet the high-performance standards of Studer's premium segment. The machine bed made from the company's own Granitan® S103 mineral cast-iron with its outstanding damping and thermal properties also ensures excellent surface quality on the favoritCNC.

### Simple operation and smart software

The operation of the new favoritCNC is now even easier and user-friendly via a 10.4-inch flat screen and an ergonomic manual control unit close to the grinding process. In addition,

the internally developed and optimised StuderPictogramming and StuderGRIND grinding software provide modern digital solutions that allow even complex grinding processes to be set up and controlled intuitively. On the new favoritCNC, it is now possible to grind non-circular forms and threads with StuderThread and StuderForm. Thanks to the machine's digital capabilities, even employees with little knowledge of CNC grinding can quickly achieve high-quality results.

With the new conventional grinding mode, the machine is also capable of manual grinding. This allows users to efficiently produce high-quality ground workpieces without programming knowledge, making the switch from a conventional machine to a CNC particularly easy. "As a result, the new favoritCNC is an optimal solution for a wide range of different grinding applications," concludes Sandro Bottazzo.

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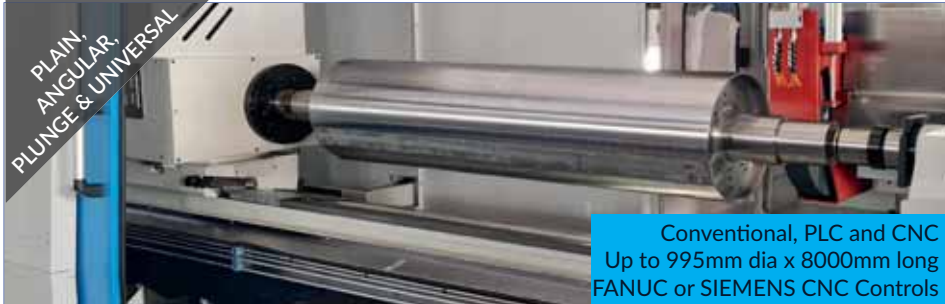




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### SERVICE & SUPPORT:

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### SCAN FOR MORE INFO:

RK International Machine Tools, a family-run business, has been a pioneer in supplying machine tools since 1951.

Our extensive product range includes one of the largest product ranges of grinding machines from a single supplier in the UK with local support by factory trained engineers.



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# RK International's advanced grinding solutions

TIMTOS has been known as one of the leading global machine tool exhibitions for many years, with over 90,000 visitors in 2023. In March, RK International Machine Tools, one of the UK's leading grinding machine suppliers, supported its partners at the exhibition in Taipei, Taiwan.

"Working closer than ever, the RK relationship with four key partners provides an unrivalled product portfolio to meet the UK and Ireland's high precision manufacturing demands. If you need components precision ground, I am sure we have a solution, says Simon Rood, RK director and general manager.

### Jainnher

With a partnership dating back over 30 years, long-term partner Jainnher, a grinding specialist, showcased four machines from its established range.

Already one of the most popular ranges of UK-installed centreless grinding machines, the Jainnher JHC-2416T CNC7 with a 230 mm OD grinding capacity, the JHC-2416T sits mid-range of the 610mm dia grinding wheel series with a 405 mm wide wheel, wheel widths of up to 610 mm are available on the JHC-2424T model. At TIMTOS, a 7-axis FANUC control controlled the independent slides for feed, grinding and regulating wheel, grinding and regulating wheel dressing, plus gantry loading robot.

"It is noticeable that in recent years, the number of installations on Jainnher centreless grinding machines has increased significantly.



Often replacing machines dating 50+ years, the Jainnher machines provide a more productive and safer centreless grinder for today's workplace", comments Simon Rood.

Thread grinding on the award-winning JHT-4010CNC has a 400 x 1,000 mm capacity and a +30°/-30° grinding wheel axis swivel. Equipped with Jainnher's 'Smart Machine Function,' the JHT-4010CNC automatically detects and adjusts the grinding cycle for increased efficiency and accuracy.

The productive dual spindle JHD-3205IO is the most compact double spindle grinding machine in the series and offers OD and ID grinding to 320 mm diameter x 200 mm, 6 to 200 mm x 150 mm deep in ID. Enhanced production can be increased with a B-axis work head, allowing -35° to +45° rotation to within 0.003°.

We all appreciate the importance of OD cylindrical grinding, but without accurate centres in the component, you cannot expect accurate OD between centre grinding. The JHG-1510NC2 centre hole grinding machine uses a 3-axis simultaneous grinding action, grinding the crosshatch pattern into 60-degree centres to 60 mm, up to 125 mm component diameter x 2,000 mm.

### Perfect

Another long-term partner for RK International is Perfect Machine Co, which showcased the latest generation of touchscreen-controlled surface grinding



machines at booth I0802. The new DT controller, which can be offered in sizes from 250 x 500 mm to 1,600 x 6,000 mm, along with the rotary table and ring grinding machines, represents the latest in Perfect's 'ease of use HMI'. The DT Series provides increased productivity features such as automatic down feed with roughing, finishing, and spark-out cycles.

"The popular sized, PERFECT PFG-3060DT has multiple UK installations of this machine by RK", comments Simon Rood.

CNC surface grinding was demonstrated with the PERFECT X36H model with SIEMENS 828D control, which has 2-axis CNC control and Renishaw touch probing. The high-precision X series revolves around a class P4 spindle providing <math><2 \mu\text{m}</math> runout. Available in 2- and 3-axis configurations, a programming resolution of 0.001 mm is available. With the X Series of CNC machines, profile dressing, including rotary dressers, can be offered.

The PERFECT PFG-600R provides high levels of accuracy and productivity for rotary table grinding and is commonly installed in the electronics and optics industry for sapphire, semiconductors, silicon and wafer grinding processes. The machine construction allows for flat and parallel workpieces and constant component grinding sets new levels of grinding efficiency.

## JOEN-LIH Machinery

A recent addition to the RK portfolio is JOEN-LIH Machinery. Offering additional key advanced grinding products ensures that the equipment RK supplies and supports can meet today's demanding accuracies and surface finishes and RK is working closely with JOEN-LIH on several products.

JOEN-LIH showcased its next-level precision surface grinding machines and advanced CMP polishing/lapping machines, taking high precision and high surface finishing machines to unprecedented levels.

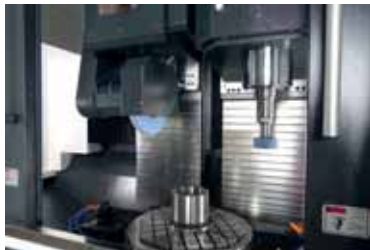
The JL-52CNC HP was just one of the eight machines on show. This 570 x 200 mm capacity 3-axis CNC surface grinding machine incorporates a linear drive for longitudinal travel with a minimum vertical programmable increment of 0.0001  $\mu\text{m}$ . This fully enclosed, ultra-precision machine is used in grinding applications in the medical and electronic component industry.

With global demand increasing in the semiconductor industry, the new JL-S12 single-sided lapping/polishing machine utilises Chemical Mechanical Polishing (CMP) over traditional lapping to reduce the surface roughness and planarise the component. The JL-S12 achieves sub-0.5  $\mu\text{m}$  on TTV, parallelism, on various components, including MCD, PCD Silicon, STI, Optical glass, Sapphire, Quartz, Tungsten and other metals, including non-magnetic materials.

The larger JL-D20 double-sided lapping and polishing machine has a 1,420 mm diameter table with five carriers that can accommodate individual components to 210 mm diameter, x 10 off, with component thickness from 0.4 to 40 mm. Routinely achieving between 0.04 to 0.01  $\mu\text{m}$  Ra, and parallelism of down to 0.5  $\mu\text{m}$ , the JL-D20 is powered by a touchscreen PLC.

## Dawn Machinery

Another new partner, Dawn Machinery's vertical grinding products, fit comfortably in the RK product range and could be seen at the show, following introductions at TIMTOS 2023.



The DN Series is available in single-spindle and dual-spindle models and offers OD grinding to 2,510 mm x 550 mm OD/400 mm ID grinding. "Adding multiple grinding spindles with an ATC option allows vertical spindle grinding to offer many benefits compared to traditional horizontal grinding, including easier loading and, often, a more compact footprint. Vertical grinding has numerous advantages, along with in-process measuring, pallet changer options and even routine maintenance costs," states Simon Rood.

The Dawn DN-808F is a dual-spindle model and will be shown with a vertical and horizontal spindle. "The benefits of adding a horizontal spindle to a vertical spindle machine allows for form and face grinding" adds Simon Rood.

The DN-808F model is mid-range and has an 810 mm diameter capacity with a 350 mm ID grinding capacity. When equipped with an ATC, up to 6 HSK-A100 mounted grinding spindles can be offered to allow for new production levels. The direct-drive, hydrostatic rotary table ensures a sub 1  $\mu\text{m}$  runout and offers capacities to 8,000 kg.

All Dawn machines are built to the demanding VDI3441 standards, with machines exceeding the positioning accuracy of X-axis  $\leq 0.004$  mm, Z-axis  $\leq 0.005$  mm and repeatability of  $\leq 0.002$  mm.

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# Precision to the point with spherical grinding

Spherical grinding represents the highest level of precision when machining spherical surfaces. Whether complete spheres, lenses, bearings, or calotte, this type of machining is indispensable across numerous industries, from optics and mechanical engineering to medical technology. Wherever perfect shape and function are required, spherical grinding is essential.

### Application in Optics:

#### Perfect sharpness and focus

Precision is crucial in optics. Lenses in cameras, telescopes and eyeglasses must be precisely ground to optimally refract light and deliver razor-sharp images. This is where spherical grinding comes into play, ensuring the required optical quality through its accuracy and surface finish. Only in this way can lenses be produced that meet the highest standards.

### Mechanical and plant engineering:

#### Spherical joints with minimal friction

Spherical joints used in a wide range of machinery must be manufactured with extreme precision to ensure minimal friction and long service life. Thanks to spherical grinding, these spherical components are ground with precise shape accuracy and dimensional stability, allowing them to function reliably even under high loads and continuous stress.

### Valves and seals:

#### Precision for tight connections

Whether ball valves or other spherical sealing surfaces, a tight yet movable connection is crucial. Spherical grinding provides the necessary precision to machine valves and seals so that they remain reliable even under extreme conditions.

### Medical technology:

#### Perfect fit for artificial joints

Spherical grinding is indispensable in medical technology. Artificial joint balls and callotes made of cobalt-chromium, titanium, or ceramic must be manufactured with extreme precision to ensure low-friction mobility in the joint and a long lifespan. The high surface quality and exact fit are essential to prevent inflammation and excessive wear. This is where the full potential of spherical grinding becomes evident, as only the smallest tolerances are permissible.



### Multigrind:

#### The solution for various challenges

The machines from the Multigrind® series by Adelbert Haas GmbH are the first choice for spherical machining. These high-tech grinding machines represent advanced grinding technology that meets the highest demands. Thanks to their kinematics, flexible process control and automated monitoring systems, they provide the perfect foundation for the precise and efficient grinding of spherical geometries.

Whether in medical technology, optics, or mechanical engineering, the perfect interplay of hardware and software ensures outstanding surface quality and allows the machining of various materials. This ensures that everything runs smoothly in every respect.

### Process design:

#### Perfect coordination for optimal results

In spherical machining, process design is crucial. From selecting the grinding medium and adjusting the cutting speed of the wheel to setting the feed rate, all parameters must be precisely coordinated to achieve the desired surface quality and shape accuracy. The machines from the Multigrind series excel in this area due to their kinematics and control technology.

### Adjustment of grinding parameters:

#### Expertise and know-how

Adapting these parameters to the specific workpiece and its inherent material properties is a key aspect. Depending on the material being processed, different grinding wheels are used. The Multigrind machines offer a grinding wheel exchange system that allows for quick changes of various grinding

tools and enables precise, software-controlled adjustments of technology parameters. Thus, everything from rough pre-grinding to precision grinding and polishing of the spherical geometry can be completed in a single clamping setup.

### Temperature management and cooling

Temperature management plays a crucial role in the grinding process, especially with sensitive materials. The heat generated during grinding can lead to thermal stresses and deformations, compromising surface geometry quality. The Multigrind series machines are equipped with an advanced cooling system that effectively reduces heat development and maintains a consistently low process temperature.

### Automated process monitoring and control

Multigrind high-tech grinding machines provide comprehensive process monitoring. Automatic real-time corrections of deviations and continuous workpiece geometry inspection are standard features. An integrated measurement system analyses machining parameters and adjusts grinding settings as needed. This automation ensures maximum material removal rates and consistently high-quality components.

By continuously recording real-time data, such as process forces across three axes and their transverse forces, constant force control during grinding is ensured. This "sensing" machine achieves unprecedented precision levels.

Through the seamless integration of hardware, software and automation solutions from Adelbert Haas, incorporating a

measurement solution into the automation process becomes a natural step.

### Maximum precision, efficiency and perfect surfaces

The production of spherical geometries presents different challenges depending on the industry. The high-tech grinding machines from the Multigrind series meet these diverse requirements and offer advantages that are essential in modern manufacturing:

#### Perfect shape accuracy:

With a tailored process design, even ultra-hard materials such as ceramics, sapphires, and hardened steels are machined with minimal shape deviations. The result is components that meet the highest tolerance demands.

#### Excellent surface quality:

Process control, developed by Adelbert Haas, ensures flawless surfaces and enables the production of polished finishes. Friction and wear are minimised, which is particularly crucial for ball joints and medical components requiring long service life and reliable functionality.

#### High process reliability:

Automated process monitoring, precise machining parameter control and state-of-the-art measuring technology guarantee that manufactured parts always meet the highest quality standards. Potential errors can be detected and corrected early, allowing customers to achieve fully autonomous production across multiple unmanned shifts, producing precision parts without operator influence.

#### Efficient manufacturing:

The ability to perform multiple machining steps in a single setup reduces setup times and increases productivity. This saves time and costs, making the production of complex geometries highly economical. Particularly with decreasing batch sizes, component

throughput times in manufacturing can be drastically reduced.

#### Automated clamping systems:

With decades of expertise in clamping complex geometries, Adelbert Haas provides fully automated solutions with minimal setup effort, ensuring highly accurate results.

#### Flexibility in application:

Whether ball bearings, valves, medical components, or optical parts, Multigrind

machines offer maximum versatility and enable precise machining of a wide range of materials and geometries.

Contact Adelbert Haas to learn more about the innovative solutions of the Multigrind series and discover how the company can elevate your manufacturing to the next level.

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# Master Abrasives and Eisenblätter partnership enhances UK surface finishing capabilities

Midlands-based Master Abrasives has recently been appointed as an authorised distributor for Eisenblätter power tools and abrasive consumables in the UK.

The Germany-based company Eisenblätter have been manufacturers of clever grinding and polishing technology for over 50 years with the goal to achieve a perfect surface result with the smallest and most cost-effective work steps. Master is now bringing the brand's high-quality abrasives and tools to the UK market with its years of experience in applications.

The partnership marks a significant milestone for both companies, combining Eisenblätter's cutting-edge technology with Master Abrasives' in-depth knowledge of the UK market. This collaboration will provide customers with access to an enhanced range of surface finishing solutions designed to improve efficiency, precision and cost-effectiveness across a wide range of industries, including metalworking, automotive and construction.

"We are excited to represent Eisenblätter in the UK," says Andy Wright, national sales manager at Master Abrasives. "Their innovative approach to power tools and abrasives aligns perfectly with our commitment to offering premium quality products to our customers. By combining their advanced technology with our local expertise and customer service, we can offer solutions that not only meet but exceed industry standards."

To ensure that businesses can experience the quality of Eisenblätter's products firsthand, Master Abrasives is offering trials of consumables such as flap discs. This allows customers to test the performance and suitability of the products for their specific applications before committing to a purchase. Master's expert sales team is available to guide customers through the process, offer technical advice and assist with selecting the best solutions for their needs.

The collaboration is poised to elevate the level of surface finishing capabilities in the UK, with Master Abrasives offering tailored support, demonstrations and expert advice to



*Midlands-based Master Abrasives is now an authorised distributor in the UK for Eisenblätter, offering businesses the opportunity to experience the quality of Eisenblätter's products firsthand with product trials.*

ensure customers achieve the best possible results. As part of its new distribution role, Master will be providing the full range of Eisenblätter's products, including grinding and polishing machines, abrasives and accessories, all backed by its trusted customer service and technical support.

In addition to the impressive range of power tools and abrasives, Master Abrasives is also proud to offer advanced belt solutions. Eisenblätter's belt machines are a perfect complement to Master's belt ranges, which are converted at its UK site using leading materials from 3M, SGA, Sia and Deerfos. This synergy enables customers to benefit from optimal performance and superior surface finishes across a wide array of applications. By combining the precision and reliability of Eisenblätter's technology with these high-quality materials, businesses can achieve exceptional results with reduced production time and costs.

With a shared commitment to quality and innovation, the new partnership is set to help UK businesses optimise their finishing processes, while benefiting from the precision and reliability that Eisenblätter is known for worldwide. This is just the beginning of what promises to be a

productive and successful partnership, bringing cutting-edge surface finishing solutions to industries across the UK.

For more information or to arrange a trial of Eisenblätter products, including flap discs, customers can contact Master Abrasives' dedicated sales team.

Master Abrasives is a Daventry-based independently owned company that has built an enviable reputation for quality and service that is as strong today as it has always been. The well-known trademark of 'Master' is on much of the product range and services offered by the company in the UK and worldwide.

Eisenblätter is a Germany-based manufacturer of clever grinding and polishing technology with over 50 years of success in their goals of achieving a perfect surface result with the smallest and most cost-effective work steps. Master is now bringing the brand's high-quality abrasives and tools to the UK market with its years of experience in applications.

**Master Abrasives**

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# 50 years of dedication to the customer

2025 marks a significant milestone for Klingspor as its UK branch in Worksop is celebrating its 50th anniversary. Since its founding in 1975, it has been an integral part of the international Klingspor family, contributing significantly to the company's success story.

Chris Taylor, managing director of Klingspor UK, emphasises: "For half a century, we have been proud to represent Klingspor's high standards in the United Kingdom. Our teams have consistently delivered outstanding service to support customers with innovative abrasive solutions. This anniversary is an opportunity to reflect on our achievements and celebrate with our partners, customers and employees."

### High quality abrasives and customer proximity

Over the past five decades, the Worksop branch has established itself as a reliable partner for customers across various industries. With a comprehensive product



portfolio ranging from grinding discs to state-of-the-art abrasive technologies and a strong focus on sustainability and innovation, Klingspor Worksop has steadily strengthened its market position.

"The 50th anniversary is not just a reason to celebrate, but also an incentive for the future," adds Chris Taylor. "We thank our customers and partners who have accompanied us on this journey for their trust and collaboration. Our goal remains to deliver excellence in the years ahead."

### Different anniversary activities are planned

The anniversary celebrations will take place throughout the year with special events for customers and employees. Klingspor invites everyone interested to be part of this special milestone and to honour the longstanding partnership.

Klingspor is an internationally organised, efficient and innovative family company involved in the business of tools for surface treatment and shaping by means of abrasion. Its main businesses are coated abrasives and cutting and grinding discs.

Boasting 36 production and sales locations around the globe, Klingspor is uniquely equipped to tend to the requirements of all regional markets and customers in a highly versatile manner.

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# Grinding Machines That Drive Your Success



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# Customising CBN and diamond wheels for specialised applications

Cubic Boron Nitride (CBN) and diamond wheels are essential tools in the realm of precision grinding and cutting. These wheels are renowned for their exceptional hardness and durability, making them indispensable in various industrial applications. CBN wheels are highly effective for grinding ferrous materials, while diamond wheels excel in cutting and grinding non-ferrous and hard materials such as ceramics, glass and stone.

However, to achieve optimal performance and meet the specific demands of different industries, customisation of these wheels is often necessary. Customising CBN and diamond wheels allows for tailored solutions that enhance efficiency, precision and overall productivity. By adjusting factors such as grit size, bond type and wheel shape, manufacturers can create specialised tools that address unique challenges and improve outcomes in specialised applications.

### Understanding CBN and diamond wheels

Cubic Boron Nitride (CBN) and diamond wheels are specialised tools used in precision grinding and cutting applications. CBN Wheels are composed of cubic boron nitride. CBN wheels are second only to diamond wheels in terms of hardness. They are particularly effective for grinding ferrous materials, such as high-speed steels, tool steels, and cast irons. The exceptional hardness of CBN allows for efficient material removal and long-lasting performance.

Diamond Wheels are made from synthetic or natural diamond particles and are the hardest known abrasive wheels. They are ideal for cutting and grinding non-ferrous and

hard materials, including ceramics, glass, stone and composites. Diamond wheels are also used in the electronics industry for precision machining of semiconductor materials.

### Advantages of CBN and diamond wheels

#### Hardness

Both CBN and diamond wheels offer unparalleled hardness, which translates to superior cutting and grinding capabilities. This hardness allows them to maintain their shape and sharpness over extended periods, reducing the need for frequent replacements.

#### Durability

The robust nature of CBN and diamond wheels ensures they can withstand high temperatures and pressures during operation. This durability makes them suitable for demanding industrial environments and heavy-duty applications.

#### Efficiency

The high cutting efficiency of CBN and diamond wheels results in faster material removal rates and smoother finishes. This efficiency not only enhances productivity but also reduces operational costs by minimising downtime and maintenance.

By understanding the composition and benefits of CBN and diamond wheels, industries can leverage these tools to achieve precise, efficient and cost-effective grinding and cutting solutions.

### Why customisation is essential

#### Limitations of standard wheels

Standard CBN and diamond wheels, while effective for general applications, often fall short when it comes to specialised tasks. These limitations include:

#### Generic specifications

Standard wheels are designed with broad specifications to cater to a wide range of applications. This generality can lead to suboptimal performance in specialised tasks that require specific characteristics.

#### Inflexibility

Standard wheels may not accommodate the unique requirements of certain materials or processes. For instance, they might not provide the precise grit size, bond type, or

wheel shape needed for a particular application.

#### Performance constraints

Using standard wheels in specialised applications can result in reduced efficiency, increased wear, and lower quality finishes. This can lead to higher operational costs and more frequent wheel replacements.

#### Benefits of customised wheels

Customising CBN and diamond wheels offers several advantages that address the limitations of standard wheels:

#### Improved precision

Customised wheels are tailored to the specific requirements of the application, ensuring optimal performance. This precision leads to better quality finishes and more accurate results.

#### Enhanced efficiency

By selecting the appropriate grit size, bond type and wheel shape, customised wheels can achieve faster material removal rates and smoother finishes. This efficiency boosts productivity and reduces processing time.

#### Increased longevity

Customised wheels are designed to withstand the specific conditions of the application, resulting in longer tool life. This durability reduces the frequency of wheel replacements and lowers overall operational costs.

#### Optimised performance

Customisation allows for the fine-tuning of wheel properties to match the exact needs of the task. This optimisation enhances the overall performance, making the grinding and cutting processes more effective and reliable.

In summary, customising CBN and diamond wheels is essential for specialised applications as it overcomes the limitations of standard wheels and provides significant benefits in terms of precision, efficiency and longevity.

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Introducing Metalynx Ceramic non-woven cleaning and stripping products

Weiler Abrasives, a leading provider of abrasives and power brushes for surface conditioning, has announced a new ceramic option in its non-woven surface conditioning disc lineup designed to remove coatings and rust in preparation for welding and manufacturing operations. New Metalynx Ceramic non-woven strip discs deliver superior cleaning power and extended product life for applications in metal fabrication, shipbuilding, automotive and other industries.

“Our new Metalynx Ceramic strip discs use an innovative formulation that provides industry-leading material removal and cleaning power for maximum surface cleaning efficiency,” says Michael Zulauf, product design engineer, Weiler Abrasives. “With an optimal balance between conformability and toughness, these discs help users clean faster and clean more.”

Metalynx Ceramic strip discs clean up to 20 percent more material and are up to 20 percent faster than a leading competitive product, delivering superior cleaning power and extended product life for steel and stainless steel. The self-sharpening ceramic

grains effortlessly clean welds and remove thick coatings and stubborn rust, maintaining a consistent cut rate for greater efficiency. The ultra-flexible non-woven nylon fibre and resin formula create a wider footprint and increases the contact area with the work surface, boosting productivity without compromising wheel life. This results in industry-leading material removal and cleaning power for maximum surface cleaning efficiency. These discs are ideal for weld cleaning, surface preparation and blending, as well as removing thick coatings and heavy rust.

In addition, Weiler Abrasive has upgraded its Metalynx SiC strip discs for improved performance and life. These silicon carbide discs clean up to 30 percent more material than the industry leader in this category, offering a fast-cleaning, long-life solution for steel and stainless steel. Silicon carbide grains provide a high initial cut and penetration, making them ideal for cleaning hard surfaces such as hard-grade steel, structural steel, hot-rolled steel and stainless steel. The ultra-flexible non-woven nylon fiber and resin formula creates a wider



footprint and increases the contact area with the work surface, boosting productivity without compromising wheel life. The discs are low sparking, which is necessary for confined spaces and areas where hot work is not permitted. Metalynx SiC strip discs provide best-in-class material removal, ensuring a durable and long-lasting solution for user’s surface cleaning needs. These discs are ideal for removing paint, rust, light mill scale and varnish as well as for weld cleaning. The Metalynx Ceramic and Metalynx SiC strip discs use a contaminant-free formula that provides a worry-free solution for stainless steel.

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<sup>1</sup> Performance testing in a typical weld preparation process; 3M™ Cubitron™ 3 Fibre disc average compared to the average result of 10 globally available high-quality competitive shape type-27 Grinding wheels including ceramic grain products, according to independent testing by Fraunhofer Institute, January 2024

<sup>2</sup> Noise energy operator exposure testing in a typical weld preparation process; Cubitron™ 3 Fibre disc average compared to the average result of 10 globally available high-quality competitive shape type-27 Grinding wheels including ceramic grain products, according to independent testing by Fraunhofer Institute, January 2024.

<sup>3</sup> Hand-arm vibration testing in a typical rust removal process; Scotch-Brite™ Clean and Strip XT Pro Discs average compared to the average of wire cup brushes tested, according to independent testing by Fraunhofer Institute

# Discover the ultimate combination disc for right-angle grinders

Norton Abrasives is excited to introduce the Rapid Prep 2-in-1 flap disc, a game-changing tool designed to enhance your surface preparation jobs. This versatile disc combines grinding and finishing functions, setting a new standard in performance.

### The power of 2-in-1 technology

Featuring an innovative dual-layer design, the Rapid Prep 2-in-1 combines interleaved coated abrasive flaps with a non-woven surface conditioning material. This blend delivers exceptional results, eliminating the need for multiple abrasive steps and significantly reducing both time and costs.

**Coated abrasive:** With ceramic on aluminium oxide grain, this highly flexible, cloth-backed abrasive ensures effective material removal.

**Non-woven material:** Provides a smooth, high-quality finish by seamlessly blending and polishing surfaces.

### Benefits

**Ease-of-use and reduced risk of damage:** The disc offers a soft cushioning effect, ensuring user-friendly operation and minimising the risk of damage.

**Adaptive capability for contours and tube shapes:** Its versatile nature makes it ideal for working on intricate contours and tube shapes.

**Gouge-free performance for users of all levels:** The forgiving structure allows users, regardless of experience level, to confidently use the disc without the risk of gouging.

**Versatility across various materials:** Suitable for a wide range of applications, including stainless steel, aluminium, special alloys, soft metals, wood, and auto repair.

### A solution for delicate components

Ideal for delicate components where traditional abrasives might cause damage, the Rapid Prep 2-in-1 flap disc ensures a high-quality finish while maintaining surface integrity. Its effective cutting action removes welds while preserving the surface's pristine condition.



### New Norton AEROS grinding wheel

The new Norton AEROS grinding wheel leverages advanced technology to deliver exceptional precision and efficiency in demanding surface and creep feed grinding applications.

Designed for multi-feature processes, it reduces setup time and enhances productivity in complex, high-precision environments.



### New Norton AEROS advantages

**Reduced cycle time:** The new combination of sharp grains and durable bond properties enables faster material removal, reducing cycle times and lowering operational costs.

**Improved part quality:** Due to advanced bond chemistry and an innovative porosity design, Norton AEROS requires less power and lower cutting pressure, minimising heat generation and preserving metal integrity. The fine, well-distributed porosity ensures stable cutting performance, leading to consistently high part quality.

**Longer wheel life:** The new bond provides higher grain retention strength, enhancing mechanical stability and reducing the need for frequent dressing. This results in longer wheel life and significant savings on wheel and dresser replacements.

As a brand of Saint-Gobain, a worldwide leader in light and sustainable construction, Norton offers the widest portfolio of cutting, grinding, blending, finishing and polishing solutions for all markets, materials and applications with the most advanced and affordable technology. So, as your needs evolve, access to the global expertise of Saint-Gobain becomes ever more valuable to making a difference in your day-to-day needs. You don't have to look far for local expertise with 61 manufacturing plants, eight centres of excellence, four grinding technology centres and 3 R&D innovation centres located across the globe.

When Norton Company was purchased by Saint-Gobain in 1990, the brand became part of a corporate entity with more than 350 years of materials history.

It is proud of its strong presence in your communities. With nearly 11,000 employees spread across 79 countries, it is a global brand delivering locally. Employees are conceiving, making, delivering and selling products that you're using in daily activities whether at work or throughout the home. They bring deep experience and share common values focused on delivering powerful, precise and user-friendly solutions to any finishing/refinishing application.

**Norton**  
**Saint-Gobain Abrasives**  
**Tel: 01785 279553**  
**www.nortonabrasives.com**

# Mirka launches new high performance grinding wheels

Mirka is expanding its product portfolio with the launch of the Mirka® Cafro Ultra-Flute grinding wheel range, designed for the precision grinding of solid tungsten carbide tools. This innovative product line offers users a selection of durable and precise grinding wheels, engineered to withstand the demands of large-scale production runs.

The Mirka Cafro Ultra-Flute is engineered as a single-piece construction and features an abrasive rim that has a porous structure that optimises the power transfer from the grinding machine to the material. This design ensures high stock removal rates in less time, which leads to an increase in the overall efficiency of the process. The product has been developed with durability at the forefront of the design process, highlighted by its edge retention that aids in the delivery of fast, efficient and consistent performance, so there is a reduction in cycle times. The grinding wheel also helps increase productivity as there is less downtime due to the dressing intervals being longer.

The Mirka Cafro Ultra-Flute also provides the user with a quiet operation, no vibrations



when in use and stable power absorption for reduced energy consumption during the time it is working. Additionally, when paired with automatic tool loaders, it performs at an optimal level and leaves a consistently fine surface finish.

Kevin Jackson, business development manager for superabrasives and automation at Mirka UK, says: "With the launch of the Mirka Cafro Ultra-Flute, we are providing tool manufacturers with a cutting-edge solution that enhances productivity and reduces costs. This new grinding wheel range also highlights our commitment to providing high-quality, performance-driven grinding



solutions that will be an asset to the end user from the first use to the last."

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## A Practical Guide to Precision Grinding



This book has been written for the people who, figuratively speaking, put their noses to the grindstone every day. The book distills what the author, Walter Graf, learned during over 40 years in the abrasive industry: Travelling the industrialized world, optimising customers' grinding processes and giving grinding seminars.

372 pages, divided into some 20 chapters covering, among others, OD & ID cylindrical grinding, centreless grinding, surface and creep-feed grinding, gear grinding, how to run grinding tests, diamond dressing, giving practical advice on effectively running these processes. Excessive wordiness was consciously avoided and counterbalanced by graphics and simple formulas to make the contents understandable, digestible and actionable.

Anyone wishing a summary of the contents, with the first page of each chapter, please send a request to [info@adgrind.com](mailto:info@adgrind.com)

**Costs per copy: £71.00 with free delivery**



The book is now on stock in the UK at:  
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# Aero manufacturer is clear for take-off

In the aerospace industry, compliance with standards is not just a requirement in manufacturing, but a culture embedded in every aspect of a business. With accreditations that include ISO 9001, ISO 14001, ISO 45001 and AS: 9100, as well as multiple OEM approvals, Senior Aerospace Weston places significant importance on workplace standards which is why the Lancashire company has installed more than 50 Filtermist oil mist filters on its machine tools.

Working primarily with OEMs like Rolls-Royce, Airbus, MTU Engines, Spirit Aerosystems and many other prestigious clients, Senior Aerospace Weston manufactures a variety of aerofoil and aerostructure components for various platforms in the commercial aviation market. Founded in 1937 and acquired by Senior plc in 2011, the Earby-based manufacturer is now part of an FTSE 250-listed group with over 6,800 employees in 12 countries.

As part of a global group in the top echelons of aerospace manufacturing with 3- to 5-axis machining and grinding, CAD/CAM, assembly, NDT, surface treatment, robotic polishing and much more, achieving standards is critical. Gary Bell from Senior Aerospace Weston says: "Here at Senior Aerospace Weston, we believe in maintaining good, orderly, clean standards, housekeeping and a good working environment. A clean working environment is essential to ensure that we produce our high-specification components."



Providing more detail on the machine shop, Gary Bell adds: "We make a variety of aerospace components for different aircraft programmes and work with a range of materials. This is predominantly aluminium, but we also work with titanium, bronze, nimonic, inconel and steel. We have lots of different types of CNC machining centres with 3-4- and 5-axis machines. Each machine is specified to manufacture certain types of components and this is why we have such a wide variety."

With Filtermist extraction units, including the FX6002 and FX7002 on 58 of the company's machine tools, it is imperative that oil mist is extracted from the machines. As Gary Bell adds: "The type of high-speed machining that we undertake produces oil mist that needs removing from the working

environment. Our first thought was to look at the industry-leading standards and Filtermist was the name that first came up. We engaged with them straight away and they were extremely helpful in giving us some advice and support. They were able to come on-site and carry out a free survey so that they were able to specify exactly what equipment would be available to support our needs."

With machine tools from leading manufacturers such as Matsuura, DN Solutions via Mills CNC, Grob and Hermle among others on-site.

Gary Bell continues: "In total, we have 58 Filtermist extraction units. Some machines require multiple Filtermist units to be installed to ensure the volume is extracted quickly and efficiently. We have a huge variety of machines and the Filtermist units



are flexible enough to accommodate the different types, sizes and requirements of those machines. We have machines that are large in scale, so we needed something that was able to extract from all those different types of scenarios effectively."

Discussing the maintenance requirements and the ongoing relationship with Filtermist, Gary Bell states: "The beauty of the Filtermist system is it's easily serviceable, so we can specify whether the Filtermist units are standalone or mounted to the equipment. They are easily accessible for the service engineers to come in and replace any components effectively and quickly. The Filtermist units are fitted with F monitors, which are a really easy-to-use system. The operators can see at a glance using the traffic light system whether there are any issues with the effectiveness of the extraction."

Using the globally recognised 'traffic light' system of coloured warning lights to alert machine operators when the unit needs servicing, the F Monitor measures velocity pressure to check the airflow through the Filtermist oil mist collector is correct. The Bluetooth-enabled F Monitor 2 measures airflow and time while the F Monitor 2+ also monitors vibration and motor temperature

making it even easier to identify when the Filtermist unit needs servicing. For existing customers, the F Monitors can be retrofitted to the complete Filtermist range and are available as an optional accessory on all Filtermist units.

Concluding on this ease-of-use and maintenance, Gary Bell says: "We can hold a small stock of Filtermist equipment on site and our maintenance teams can react and make sure that the equipment is kept in a serviceable, well-maintained and efficient manner. Maintaining and keeping clean working areas is vital to ensuring that we can continue to supply good quality parts, a clean workshop goes hand in hand with being a leading aerospace manufacturer."

You can contact its team of experts to find out more on: 01952 290500 or Email: [sales@filtermist.com](mailto:sales@filtermist.com)

Established in Shropshire in 1969, Filtermist's ethos is to protect people by ensuring cleaner, safer and more productive working environments. The company, part of the Swedish Absolent Air Care Group, provides an extensive range of products and services designed to ensure that the air in production facilities is free from contaminants such as oil mist, smoke, dust,

fume and VOCs. If left in the atmosphere, airborne particles can be hazardous to health and pose a fire and slip risk.

Filtermist is best known for manufacturing a range of compact, quiet and efficient oil mist filters, which are trusted by world-leading manufacturers in more than 60 countries. In the UK, Filtermist offers a turnkey service that includes initial consultation and project planning, extraction system design and specification, equipment manufacture and supply, installation and commissioning.

An active acquisition programme means that in addition to Filtermist oil mist filters, the company also manufactures Dustcheck process filters, venting filters and dust collectors and Kerstar industrial vacuums, including ATEX-rated models. Filtermist is also the UK distributor for sister company Absolent AB and offers comprehensive aftersales services, including filtration consumables, COSHH-compliant LEV testing, air monitoring and extraction system maintenance throughout the UK.

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## Wide range of filter technologies

The KNOLL product portfolio includes a wide range of filter technologies, from simple systems with consumables to consumable-free ultra-fine filtration. It offers customised solutions for individual, group and central applications.

Its filter technology is used in the manufacture of components for the automotive industry, tool manufacture, medical technology, power generation and all other metalworking industries. It relies on proven system concepts that guarantee maximum availability and the well-known KNOLL quality.

The customised filter solutions for the grinding process are particularly noteworthy. The range includes both standard filtration and high-end filter options. The filters are modularly expandable and can be used in individual systems as well as in centralised systems.

KNOLL filter systems clean coolant lubricants up to the very fine range, even without filter consumables. The filtration systems can be operated locally for standalone machines and centrally for

machine groups or complete production areas.

The HydroPur filter system is configured according to your requirements and installed quickly. With the modern SmartConnect control, you can easily operate and monitor the HydroPur. In this way, you have all relevant data at a glance.

With a global supply network and the support of local subsidiaries as well as sales and service partners, it is always close to our customers and offers comprehensive support.

Service is one secret to KNOLL's success. As its products are used around the world, it can offer you this service globally.

It will assist you in timely fashion and provide conclusive diagnoses. If necessary, it will send you its service technicians on short notice. In its spare parts warehouses, it stocks the most common wearing and spare



parts and consumables. They can be relied upon at any time for quick shipping and prompt use.

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# Specialists in polishing technologies

LAM PLAN lapping and polishing machines have been developed with the products of its patented LAM PLAN M'M' system. The LAM PLAN range of lapping and polishing machines respond to multiple lapping and polishing applications. These machines will respond to the market's demand in terms of high-quality polishing flattening of surfaces inferior to a micron. The wide spectrum of the proposed versions allows treating parts of all dimensions, from micro mechanic to sealing parts measuring several decimetres.

Since 1962, LAM PLAN has imposed itself as a real specialist in all the polishing technologies. It provides its customers with scientific competences and the technical know-how to accompany them in an ever-finer control of their lapping and polishing problematics.

From research and development to the implementation of recommended high-performance abrasive solutions, its teams deploy each day, throughout the world, an effective and friendly process with respect to environmental problematics.

The polishing technology requires not only high-quality products, but also methods and an irreproachable service.

### M.M.8400

The M.M.8400 machine is both lapping and polishing equipment which enable you to integrate a means of flat surface finishing into your workshop, at a reasonable price. Its compact size and ergonomic controls facilitates installation and use. The simple tried and tested design, equipped with medium dimension plates, enables you to cost effectively produce small runs. Equipped with either a cast iron plate, DIALAM®, LAM PLAN M'M'® or FAS®, this range of machines lets you achieve any type of surface finish defined by your



specification, e.g. lapping, stock removal, grinding, polishing etc.

The process is controlled via a touchscreen, which ensures good ergonomic and intuitive use. This range of machines also gives you the possibility of saving programmes, assuring repeatability of lapping/polishing processes implemented in your workshops.

This range of machines is compatible with the new LAM PLAN 709, 710 and 719 distribution systems managed directly from the machine's control panel.

### M.M.8600

M.M.8600 machine is a lapping/polishing device that allow you to add in your workshop a finishing tool for flat surfaces for a reasonable cost.

The compactness and the control ergonomic facilitate setting up and usage. Simple and proven, equipped with a medium



size plate, it enables you to elaborate small production with controlled costs.

Equipped with cast iron, DIALAM, NEW LAM M'M' or FAS plate, the machine will allow you to overcome all types of surface finishing defined by your specification.

### M.M.9480 - S version

The M.M.9480 S is the 9000 series small diameter flat lapping machine.

This Ø 480 mm lapping machine has all the technical solutions of the large capacity models. Therefore, it is particularly robust



and stable. The support plate rests on a trust ball bearing, providing strong stability. The gear motor is protected even in high pressure conditions.

Fully equipped in its standard version, it has an electronically controlled three cylinder arm. The machine's smaller size makes it easier for the operator to manipulate all the accessories, such as changing the plate or loading and unloading the rings.

**LAM PLAN Industries Ltd**

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# Lapping and polishing clipper blades (Sharpening)

Lapping is an essential process in maintaining high-performance clipper blades. By using precision equipment and controlled parameters, the lapping process enhances the sharpness, longevity and efficiency of the blades. Whether used in pet grooming, hairdressing, or industrial applications, properly lapped clipper blades provide superior performance, making them an invaluable tool for professionals.

The primary objective of lapping clipper blades is to achieve a perfectly flat and smooth surface, ensuring efficient and consistent cutting performance. This process enhances the sharpness and longevity of the blades while minimising friction and wear.

## Process breakdown

The lapping process was carried out in a structured manner to ensure uniformity and precision. Each clipper blade was centrally positioned into a 15" control ring to maintain alignment. A felt pad was placed on top of the blade to compensate for any uneven top profile, ensuring uniform pressure distribution. To maintain consistent pressure on the blade during lapping, a Dycem faced pressure weight was applied. The Kemet Iron lapping plate was cycled with Kemet liquid diamond, 14-micron Type K Std, dispensed at a controlled ratio of two seconds of diamond spray every 45 seconds until the blade surface achieved the desired finish. The processing time varied depending on the component size. For larger blade components, the media used was 14 Micron Type K Std, with a Kemet Iron plate and a weight of 4 kg, running for three minutes per side. Smaller blade components underwent the same process but were lapped for two minutes per side.

Finally, processed clipper blades were cleaned using CO42 cleaning fluid to remove all residual abrasive material and ensure a polished finish. The process times can be optimised by increasing the micron size of the liquid diamond or applying additional weight. This can expedite material removal while maintaining precision.

The following clipper blades underwent lapping: Oster: Number 4, Size 10, Size 3F, Elite Size 3½, Andis: Number .000, Number .5, 16 mm, Artero: 19 mm, Size 5/8.

## Benefits of lapping clipper blades

Lapping clipper blades offer numerous



advantages. One key benefit is improved sharpness and cutting efficiency. The process ensures a razor-sharp edge, enhancing the blade's cutting precision and reducing the need for frequent sharpening. Another advantage is the extended lifespan of the blade. By reducing wear and tear and providing a smooth and even surface, lapping helps prolong the blade's durability. Consistent flatness and uniformity are also ensured, allowing even contact between the moving and stationary blades. This prevents uneven cutting and enhances performance. Additionally, lapping reduces heat and friction. A smoother blade surface generates less heat and friction, minimising discomfort for the user and the subject being groomed. This contributes to a better overall experience. The process also minimises maintenance requirements. A well-lapped blade maintains sharpness longer, reducing

the need for frequent sharpening and replacement. Finally, enhanced user experience is a significant benefit. Professional groomers and barbers benefit from improved blade reliability, leading to more precise and effortless grooming sessions.

Established in 1938, Kemet International Ltd is at the forefront of precision lapping and polishing technology, using Diamond Compound and Diamond Slurry, which are manufactured in house to ISO 9001:2015 quality standards. It offers innovative solutions to operations which demand precision finish and close tolerance. Its highly specialised and accurate lapping machines can machine a wide variety of materials for numerous applications.

Kemet's expertise is available to you through its in-house technical specialists, a team of technical representatives in the UK and an extensive network of overseas subsidiary companies and distributors.

Its process laboratories are fully equipped with the latest range of lapping machines, polishing machines, ultrasonic cleaners, mould polishing and metallographic and geological thin sectioning equipment to carry out tests on customers' samples. In addition, its team of industrial chemists are able to manufacture bespoke diamond lapping and diamond polishing compounds and diamond suspensions.

**Kemet International Ltd**  
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# What is abrasive blasting?

## A comprehensive guide

Abrasive blasting, is a technique used to clean, smooth, or shape surfaces by propelling abrasive materials at high speeds.

This method is widely used across various industries, including engineering, aerospace, and manufacturing, due to its efficiency and versatility. In this comprehensive guide, we'll explore what it is, the types of abrasive materials used, the different techniques used, and the benefits it offers. In addition, we will discuss how SurfacePrep UK can assist you in achieving the best results with abrasive blasting.

### Understanding abrasive blasting

Abrasive blasting involves using a stream of abrasive material directed at a surface under high pressure. This process effectively removes unwanted contaminants, rust, paint, or coatings, leaving a clean and smooth surface behind. The technique is particularly useful for preparing surfaces for painting, coating or bonding.

### Types of abrasive materials

**Glass bead:** Ideal for peening and cleaning surfaces without causing damage.

**Steel grit:** Used for aggressive cleaning and surface preparation, especially for removing paint and rust.

**Aluminium oxide:** A durable abrasive used for preparation, finishing and polishing.

**Garnet:** Used for a cleaner application than traditional expendables with improved cutting performance and low to tendency for embedment. Used in surface preparation and surface finishing.

**Plastic media (Avalite Type II, III, V):** Gentle abrasives used for cleaning softer surfaces without causing damage. Used in the automotive and aerospace industries.

### Techniques of abrasive blasting

**Abrasive blasting (dry):** Uses compressed air to propel abrasive material, suitable for tougher cleaning and surface preparation tasks. This technique is versatile and widely used in various industries.



**Wet abrasive blasting (wet):** Combines water with abrasive material, reducing dust and heat generated during the process. The process is used for delicate surfaces and environments where dust suppression is essential.

**Vacuum blasting:** Incorporates a vacuum system to recover the abrasive material and debris, making it ideal for confined spaces and reducing clean-up time.

### Benefits of abrasive blasting

It quickly and effectively removes contaminants, such as rust, paint and other coatings from the surface.

Its advantages are that it saves time compared to manual cleaning methods and improves productivity and it can be used on a variety of materials, including metal, concrete, wood and plastic. This makes it suitable for various applications and industries. Abrasive blasting creates a clean and roughened surface to a specific profile, ideal for improving the bond of paints, coatings and adhesives. The process is

targeted for cleaning and surface preparation, ensuring only the desired areas are treated. It reduces labour costs and time required for surface preparation and cleaning, making it a cost-effective solution for many industries.

### Safety considerations

While abrasive blasting is highly effective, it presents potential health and safety risks. Proper protective equipment, including respirators, gloves and eye protection, is essential to safeguard workers from inhaling dust and exposure to hazardous materials. Additionally, ensuring proper ventilation and dust collection systems can help minimise risks in the workplace.

**\*Blasting with sand, was made illegal in the UK in 1950. The use of sand in abrasive blasting was prohibited due to the significant health risks it poses, particularly the development of silicosis, a serious lung disease caused by inhaling fine silica dust. Therefore, sand should not be used in this process.**



SurfacePrep UK is a leading provider of abrasive blasting equipment and services, offering a range of solutions to meet your specific needs.

Abrasive blasting is a powerful and versatile technique for cleaning, smoothing and preparing surfaces across various industries. By understanding the different abrasive materials, techniques and benefits, businesses can choose the most suitable method for their specific needs. Always prioritise safety measures to protect workers and ensure efficient and effective abrasive blasting operations.

## Essential equipment for abrasive blasting

There is a range of essential equipment for abrasive blasting. Abrasive blasting, is a vital process in surface preparation, used to clean, roughen, or smooth surfaces before applying coatings like wet paint or powder coating.

SurfacePrep UK understands the importance of using the right equipment to achieve the best results while ensuring safety and compliance with regulations. In this article, it will walk you through the essential equipment needed for abrasive blasting and some critical considerations for the UK market.

## What equipment is needed for abrasive blasting?

To perform abrasive blasting effectively, you'll need essential equipment including a blast machine, comprising a blast pot, hose and nozzle, appropriate abrasive media, like aluminium oxide or glass beads, note that silica sand is now illegal in the UK due to health risks, protective gear, blast helmet, respirator, gloves, blast suit and hearing protection, a dust collection system and optional accessories such as a media recovery system and adequate lighting. Proper equipment ensures efficiency, safety and compliance with UK regulations.

### Blast machine:

#### The centre of your operation

At the core of any abrasive blasting setup is the blast machine, which consists of several key components. The blast pot is where the abrasive media is stored and mixed with air before being propelled through the nozzle. The size and capacity of the blast pot depends on the scale of your project. Connecting the blast pot to the nozzle, the blast hose delivers the abrasive material to the surface. The hose must be durable and flexible to withstand the harsh conditions of blasting.

The nozzle controls the flow and pattern of

the abrasive material, allowing for precise application. Different nozzles are available depending on the specific requirements of your project.

### Abrasive media:

#### Choosing the right material

Selecting the appropriate abrasive media is crucial for achieving the desired surface finish. Historically, silica sand was a popular abrasive medium. However, it's important to note that silica sand is now illegal in the UK for abrasive blasting. This ban is due to the severe health risks associated with inhaling Respirable Crystalline Silica (RCS), which can lead to silicosis and other serious respiratory diseases. SurfacePrep UK strongly advises against the use of silica sand and recommend safer alternatives from its range of abrasives.

### Safety first

Abrasive blasting can be hazardous, making protective equipment a complete necessity. A high-quality blast helmet is essential to protect your head and face from flying debris while ensuring a supply of clean, breathable air. Given the dangers of dust and particulate matter, a respirator or an air supply system is crucial to protect your respiratory system. Heavy-duty gloves shield your hands from abrasive particles and potential injuries. A blast suit offers full-body protection, ensuring that your skin is safe from abrasive impacts. Blasting operations can be extremely noisy, so using proper hearing protection is vital to prevent hearing loss.

### Efficiency and cost savings

For larger operations or those looking to maximise efficiency, a media recovery system can be invaluable. Vacuum or suction systems collect and recycle the abrasive media, reducing waste and saving costs on materials. The separate/screening system separates reusable media from dust and debris, ensuring that only clean, effective abrasive is used.

### Dust Collection System:

#### Keeping the workspace clean

A dust collection system is critical for maintaining a clean work environment and protecting both the operator and surrounding areas from harmful dust

The Dust Collector System captures fine



particles and dust generated during blasting, improving visibility and ensuring compliance with health and safety regulations. Good lighting is essential, especially when working in enclosed or dimly lit areas. Proper lighting ensures that you can see the surface clearly, allowing for more accurate and effective blasting.

Control systems help maintain safety and precision during blasting. The Deadman Switch safety device stops the flow of abrasive when released, ensuring that blasting only occurs when the operator is in control.

Depending on the specific needs of your project, you may require additional accessories. For small-scale or contained operations, a blast cabinet provides a sealed environment for the process and improving safety. A pressure regulator ensures consistent blasting performance by controlling the air pressure.

Remember, safety and compliance are as important as the quality of your work. If you need further guidance on selecting the right abrasive media or equipment, don't hesitate to reach out to SurfacePrep UK. Your success and safety are its top priorities.

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# Faster cleaning of engine blocks with less personnel



With an innovative shot blast machine, the largest foundry in Turkey has expanded its capacity for de-sanding and cleaning of engine blocks. A significant factor in the decision for the RMBS 1-6-400-30 shot blast system from Rösler was the high degree of automation of the workpiece handling and the shot blast process. Compared to spinner hanger machines, the RMBS system offers not only drastically shorter cycle times but also requires less personnel. In addition, by replacing the two existing blast machines the new system helped provide valuable additional manufacturing space.

Among other products the renowned Turkish foundry supplies grey and nodular cast iron engine blocks, which are used in commercial vehicles and ships. The raw castings have dimensions of max. 900 x 330 x 140 mm and weigh up to 237 kg. To date, for de-sanding and cleaning the workpieces, the customer, as well as many other foundries, used spinner hanger blast machines. In this particular case the customer used two, one for de-sanding and the other for general cleaning. However, because of a steadily growing production volume the shot blasting operation became increasingly a bottle neck. For this reason, the company decided to purchase an additional, respectively, alternative shot blast system. The customer project team talked with four different equipment manufacturers, one of which was the Rösler Oberflächentechnik GmbH.

### A shot blast machine, specially designed for engine blocks

Contrary to the other equipment suppliers, Rösler offered a unique, highly innovative and efficient equipment concept, namely the RMBS 1-6-400-30 engine block blast machine. This blast system, specially adapted to the customer requirements, allows the fully automatic simultaneous blast-cleaning of one large or several smaller engine blocks within short cycle times. Towards this purpose the machine is equipped with a specially engineered gripper-manipulator. After a robot has precisely positioned an engine block in the blast chamber, the gripper picks up and firmly holds this engine block. Once the blast chamber door has been closed, the

blast program, tailored to specific work pieces, starts. The gripper precisely rotates the workpiece through the blast media stream. To increase the exposure of certain surface areas of the engine block to the blast media, the rotation can be slowed down or interrupted for a pre-defined time period. For simultaneously processing of several smaller engine blocks, these are mounted to a special workpiece fixture. The entire fixture is then picked up by the gripper and rotated through the blast media stream.

### The Rösler solution increases operational efficiency and drastically reduces personnel costs

With the old spinner hanger blast solution, the workpieces had to be manually loaded onto a special "hanger" before they could be blasted. The new system achieves the required blast results by the targeted movement of the engine blocks through the blast stream. The resulting cycle time savings are such that the de-sanding and surface cleaning operation can now be combined into one single process. This resulted in a significant increase in the overall shot blasting capacity so that the two spinner hanger blast machines used in the past were no longer needed. Moreover, the risk that certain workpiece areas are shielded from the blast stream by other work pieces could be completely eliminated. Besides the higher productivity and process reliability, the customer decision for the Rösler system was also influenced by the fact that the new

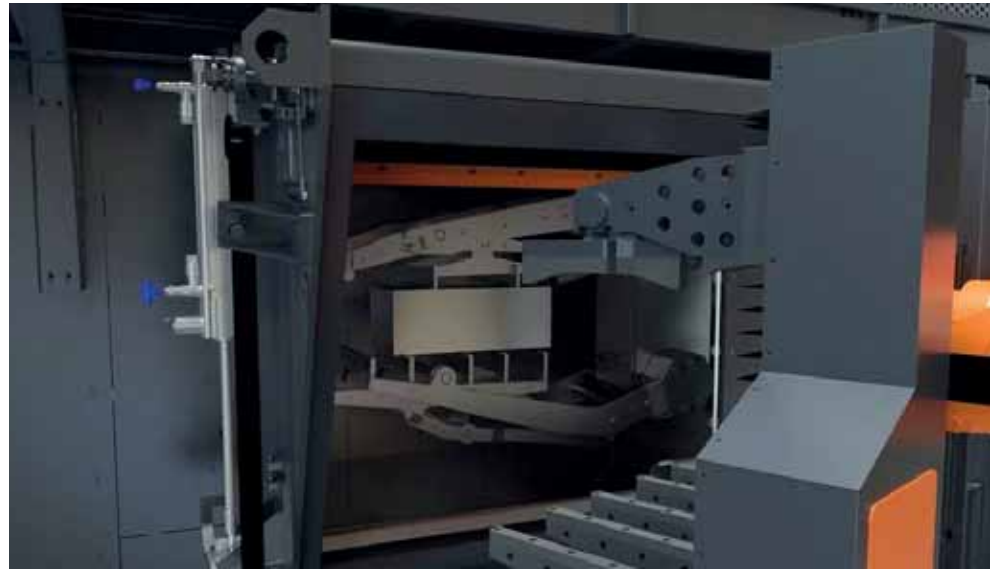


system needs considerably less personnel. In foundries it becomes increasingly difficult to find people for the physically demanding and exhausting work.

## Special wear-resistant foundry version minimises costs for maintenance

The desired shot blast results are quickly achieved by the six blast turbines, type Gamma 400G-8 HD, each with an installed drive power of 30 kW. These turbines, specially developed for shot blasting in foundries, are equipped with eight throwing blades in the typical "Y-design as compared to the standard Gamma turbines with six blades.

Another major feature of the HD turbine version is that its housing is lined with extremely wear-resistant tool steel. Through this special design the throwing blades achieve an up to three times longer uptime than their standard equivalent. This minimises work for maintenance and ensures significantly higher productivity and cost-efficiency. The special throwing blade design generates an up to 20 percent higher blast intensity with, at the same time, lower



energy consumption. This guarantees a highly effective shot blast operation. Another feature of the Gamma turbines is that both sides of the throwing blades can be used resulting in significant cost savings for spare parts. Blade changes are facilitated by a quick-change system that requires no removal of the turbine from its housing.

The blast chamber was also designed for high wear resistance. It consists of sturdy

manganese steel and is additionally lined with easily replaceable plates made from wear-resistant steel. Areas directly exposed to the blast stream are lined with special cast wear plates.

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## Leader in the supply of reliable and advanced robotic abrasive blast cleaning systems

Blastman Robotics Ltd has over 40 years of experience in delivering tailored applications in abrasive blast cleaning. It has delivered solutions for road and rail transport, foundries, wind power and energy, a multitude of steel structures, aerospace and much more.

The unique Blastman robot delivers innovative solutions, applying the latest advanced technologies to overcome blast cleaning challenges.

### The unique Blastman robot

It delivers innovative solutions by applying the very latest advanced technologies to overcome challenges in the blast cleaning environment. The company is increasingly the number one choice for blast cleaning installations around the world. Blastman robots can be incorporated into any surface treatment lines to achieve the best possible quality and optimised production. The tailored manufacturing and modular assembly of the robots allows Blastman to provide the best fit for all surface treatment

lines. Its goal is to provide customers with exceptional added value through innovative and tailored solutions, which combine greater efficiency, reliability, flexibility, unsurpassed quality and greatly improved safety.

These pioneering solutions are based on the strongest possible commitment to ongoing learning, exploration and development, enabling it to adapt to and solve new challenges.

Maintaining your system throughout the entire life of the facility and supporting your company's changing needs, Blastman Robotics Ltd takes pride in being your dedicated, supportive and reliable long-term partner.

From rail rolling stock to aerospace, Blastman's advanced robotic solutions are by far the most economical and reliable business choice.

Today the range of services provided by Blastman Robotics keeps on growing. Blastman robots and manipulators are used worldwide and with over 30 years of experience, Blastman is now firmly



established as one of the world's leading manufacturers of abrasive blast cleaning robots. The oldest robots have been in operation for over 25 years, providing a large network of valued customers.

In the future, Blastman will implement even more sophisticated technologies to the blast cleaning industry, which will provide even more value to both existing and new customers.

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## A single source for levelling and deburring solutions

ARKU offers levelling and deburring from a single source and sells its machines all over the world. At the same time, the Baden-Baden, Germany, based machine manufacturer also offers contract work on its machines.

"We have the world's largest range of precision levellers and innovative deburring technology for our customers," says Alexander Enke. He is an application technician at ARKU and constantly looks for solving challenges in difficult levelling and deburring scenarios. "Almost everything our customers need in terms of equipment or expertise for levelling and deburring can be found in our levelling centre," continues Alexander Enke.

### A single source for levelling and deburring solutions

The levelling and deburring centres at the Baden-Baden site and in Cincinnati, USA and Kunshan, China, have developed into hubs for ARKU and its customers. The most modern machines are located there. Interested parties can test them in detail together with ARKU experts.



At the same time, the centres are also the contact point for contract levelling and contract deburring. ARKU offers this service to customers who do not wish to invest in their own machines. In this case, the range of services includes the processing of a wide variety of sheet metal parts and plates. Test runs are also carried out on parts that customers wish to have processed. New machines and developments can also be trialled. Besides the processing itself, the final inspection of parts is also part of the range of services.



Additionally, the focus is on advice and training on the precision levellers and deburring machines. In order to not miss any crucial details, every order is completed in close consultation with the customer.

Subcontracting covers a large number of very different industries, all of which have to do with various metal types. Some of the industries include machine manufacturers who need parts for further processing, as well as steel suppliers who have blanks

levelled and deburred. For the automotive industry, ARKU processes large and small job orders for various vehicle types. Most recently, the Baden-Baden based company even attracted attention with a very special order: For the headquarters of the JP Morgan Chase bank in New York, ARKU levelled copper façade parts that were sent across the pond. They now lend a special flair to the outside of the bank's enormous skyscraper in Manhattan.

The range of levelling services covers a wide range of thicknesses and widths. Even

frequently changing parts or small quantities are no problem for the specialists at the centres. "We can react relatively quickly to customer requests and offer solutions if necessary," emphasises Alexander Enke. Flexibility is one of ARKU's greatest strengths. As a result, there is almost no minimum limit to the number of parts that can be processed and no maximum quantity limit either. The ability to run the machines in multi-shift operation also enables orders to be processed quickly and efficiently.

Customers appreciate this. In order to be even closer to its customers, ARKU is opening another location in Spartanburg, South Carolina, USA. In the future, sheet metal and heavy plate will be levelled there to the usual ARKU standard. The levelling centres will therefore continue to play an important role at ARKU in the future. Increasing automation creates new opportunities, for example to expand the range of parts to be processed. Technical development also remains an ongoing topic. The aim is to underpin ARKU's strong market position.

ARKU offers machines and services with high value retention. In doing so, it ensures process reliability and efficiency for customers all over the world. Its machines and systems form this foundation. To successfully handle tomorrow's challenges, it is positioned to meet the demands of the future. Yet, it also remains true to its origins: precision is our promise.

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# Midland Deburr & Finish champions 'Buy British' as shield against global economic headwinds

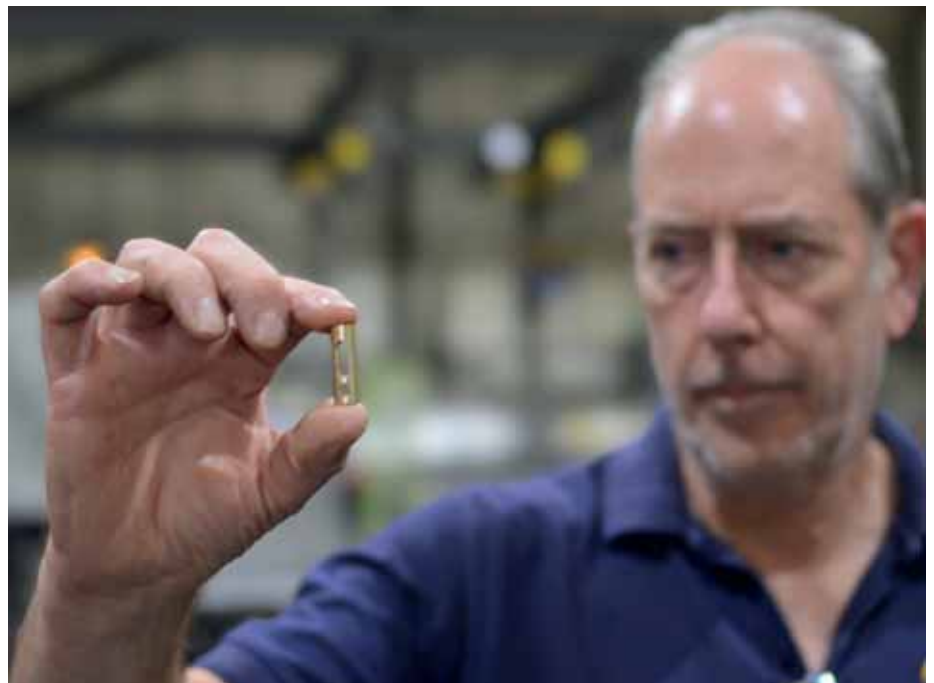
In an era of increasing global economic uncertainty and the looming threat of adverse trade tariffs, one Midlands-based manufacturing specialist is advocating for a renewed focus on domestic sourcing and production: Midland Deburr & Finish Ltd. With a 25-year history as a cornerstone of the UK subcontract finishing industry, the company believes that embracing a 'Buy British' ethos can provide a robust defence against volatile international markets.

Established in 1999, Midland Deburr & Finish has built a strong reputation as a "one-stop shop" for metal degreasing, vibro deburring, solvent degreasing, vapour degreasing, barrelling and casting impregnation. Serving a diverse clientele across the automotive, aerospace, Formula One, and general engineering sectors, the company prides itself on its commitment to quality and environmental sustainability.

According to Chris Arrowsmith, managing director of Midland Deburr & Finish, the concept of prioritising British suppliers and manufacturers has never been more relevant: "In these uncertain times, relying on complex international supply chains can introduce significant risks," he might argue. "Embracing 'Buy British' offers a pathway to greater stability, allowing us to support our national economy, reduce reliance on potentially volatile overseas markets and minimise the impact of disruptive trade tariffs."

Midland Deburr & Finish's own operational philosophy aligns strongly with this sentiment. As a privately-owned company based in the Midlands, it emphasises building strong relationships with its customers and providing a personal, friendly service. Its commitment to investing in process capacity and enhancing quality systems ensures it can meet the stringent requirements of its diverse customer base. This dedication to local manufacturing and service provision underpins its belief in the strength of the British engineering sector.

Chris Arrowsmith states: "When manufacturers choose to source and



process components domestically, they are not just investing in a transaction; they are investing in British jobs, British innovation and the resilience of our manufacturing infrastructure. This creates a more secure and predictable environment for businesses, insulating us to a degree from the shocks of the global economy."

The company's comprehensive service offering reflects a commitment to supporting a wide range of manufacturing needs within the UK. From efficiently removing burrs using its diverse range of vibratory finishing and barrel mass finishing machines to providing specialist solvent and vapour degreasing with state-of-the-art, hermetically sealed machines, Midland Deburr & Finish offers critical surface improvement solutions. It has even adapted to environmental regulations by transitioning from Trichloroethylene to Perchloroethylene in its degreasing processes. Its expansion into casting impregnation, including pre-treatment with compliant solvent degreasing and oven dehydration, further demonstrates its commitment to providing comprehensive solutions within the UK.

The benefits of a 'Buy British' approach, as championed by Chris Arrowsmith, extend beyond economic stability. Reduced transportation costs, shorter lead times and the ability to more easily ensure quality control are all tangible advantages of working with local suppliers. Chris Arrowsmith adds: "Adverse trade tariffs can significantly increase the cost of imported components and services. By prioritising British partners, we can mitigate these financial burdens and maintain competitive pricing for our customers."

By championing domestic sourcing and its own commitment to quality, British manufacturing, Midland Deburr & Finish positions itself as a reliable partner for companies seeking to weather economic uncertainty and potential tariff barriers. Its long-standing presence and comprehensive service portfolio underscores the strength and capability of the UK's subcontract manufacturing sector.

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Removing burrs and treating edges is essential for ensuring quality and safety in any shop. Burrs complicate the machining process and affect the finished part. Burrs prevent the workpiece from maintaining proper alignment placement in a fixture, resulting in reduced finish quality. Top priorities for machine shops worldwide include reducing costs through enhanced productivity, eliminating hand deburring, shortening programming time, and lowering software entry costs, amongst other goals. Mastercam Deburr streamlines deburring processes and enhances part quality, delivering significant savings in labour and tooling. The integration of Mastercam Deburr offers unparalleled precision, helping improve efficiency and reducing costs.



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# Understanding vapour degreasing fluid for cleaning success

by Elizabeth Norwood, senior chemist, MicroCare LLC

In metalworking, precision is essential. Every process step matters, from ensuring parts meet tight tolerances to achieving the best surface finishes. Cleaning is often overlooked but plays a crucial role in meeting quality standards. Vapour degreasing has long been a trusted method for achieving superior cleanliness, especially for complex parts with intricate geometries.

Choosing the right vapour degreasing fluid can be challenging, with each choice offering unique properties and performance characteristics. Understanding these differences is key to matching the fluid to specific cleaning requirements.

### The role of vapour degreasing fluids in metalworking

Vapour degreasing fluids serve a straightforward yet vital purpose: removing oils, greases, residues and other contaminants from metal parts. Unlike traditional cleaning methods, vapour degreasing excels at reaching small hidden areas like blind holes, ensuring even the most complex components are thoroughly cleaned.

This capability is essential for metalworking professionals. Contaminants left behind on parts can interfere with



downstream processes such as welding, coating, or assembly, leading to costly rework or failures in service.

The correct vapour degreasing fluid not only ensures cleanliness but also preserves the integrity of the materials being cleaned, making it a key part of supporting high-quality standards. The fluids' low boiling temperature makes them ideal for delicate

materials, preventing damage while ensuring thorough cleaning without compromising the part's structural integrity.

### Understanding vapour degreasing fluid options

A common question among manufacturers is: Which type of vapour degreasing fluid is right for my application? The answer depends on a range of factors, including the type of contaminants being removed, the materials involved, and environmental considerations. Historically, chlorinated solvents such as trichloroethylene (TCE) and perchloroethylene (PERC) were widely used due to their strong cleaning performance. However, concerns over their environmental impact, potential health risks and safety hazards for workers have led to the development of alternative chemistries. Prolonged exposure to traditional solvents posed risks such as respiratory issues and skin irritation, highlighting the importance of safer options for employee wellbeing.

Non-chlorinated solvents, including n-propyl bromide (nPB) and hydrofluorocarbon (HFCs), appeared as replacements but brought their challenges, such as toxicity and evolving environmental regulatory restrictions.

Today, hydrofluoroolefin (HFO)-based





fluids are gaining prominence. These modern formulations offer excellent cleaning performance while addressing sustainability goals. With low global warming potential (GWP) and zero ozone depletion potential (ODP), HFOs meet regulatory requirements and align with industry initiatives to reduce environmental impact. Additionally, they enhance workplace safety by offering low toxicity and reducing exposure risks, creating a safer environment for operators. Importantly, HFO fluids still provide exceptional cleaning effectiveness, making them a practical choice for industries like metalworking, where compliance, safety and cleaning performance are critical.

## Making the right choice

Selecting the correct vapour degreasing fluid for metalworking applications requires careful consideration of several factors. A key factor is compatibility with the materials being cleaned.

Metalworking involves a variety of substrates, including metals like aluminium and steel, as well as coated or treated surfaces. The selected fluid must effectively remove contaminants without damaging these materials.

Another important consideration is the type of contaminants. Heavy oils, greases, waxes, particulates and other residues require a fluid that can effectively dissolve and remove these substances without leaving traces behind. It's essential to choose a fluid designed to handle the specific types of contaminants present in the application.

Regulatory compliance is also a crucial consideration. As environmental standards continue to evolve, vapour degreasing fluids must meet relevant regulations, including European F-Gas and REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) legislation. Modern vapour degreasing fluids are often designed with low-VOC formulas, making them ozone-friendly and environmentally-friendly, without compromising cleaning performance. Adhering to these standards ensures operational compliance and supports sustainability goals.

Finally, cost considerations play a role in the decision-making process. While some



fluids may have a higher first cost, investing in high-quality fluids can lead to long-term savings. Benefits such as reduced waste, extended fluid life and lower maintenance costs can result in fewer cleaning cycles, faster production rates, and improved efficiency. For metalworking professionals, these operational benefits significantly contribute to productivity and profitability.

## Safe handling and storage practices

One of the most often overlooked aspects of vapour degreasing is properly handling and storing cleaning fluids. Maintaining stable storage conditions is crucial to preserving fluid performance. Exposure to extreme temperatures or direct sunlight can degrade the fluid's chemical properties, reducing its cleaning efficacy.

Fluids should be stored in tightly sealed, compatible containers in well-ventilated areas. Clear labelling is equally important, ensuring all containers are easily identifiable and follow safety standards. Personal Protective Equipment (PPE), such as gloves and goggles, should always be used when handling these materials to minimise the risk of irritation or injury.

Establishing a robust safety protocol, including regular training and spill response planning, is vital for supporting a safe and compliant workplace. Metalworking facilities often handle large volumes of cleaning fluids, making it even more important to prioritise proper handling and storage practices.

## The value of training and supplier support

Another common concern among manufacturers is whether specialised training is needed for vapour degreasing. The answer is often yes, particularly when transitioning to a new cleaning fluid or optimising existing processes. Leading suppliers typically offer technical support, including lab testing, process audits and training sessions tailored to specific applications.

For metalworking professionals, partnering with a supplier who provides ongoing support can be invaluable. These collaborations ensure that cleaning processes stay efficient and effective, even as production demands or regulatory landscapes evolve.

## Optimising cleaning processes

Choosing the correct vapour degreasing fluid is critical to achieving the best cleaning performance, meeting environmental standards, supporting worker safety and ensuring the quality of metalworking parts. As the industry continues to evolve, modern HFO-based fluids offer an eco-friendly solution that balances sustainability with superior cleaning capability. By partnering with experienced suppliers and considering factors such as material compatibility, contaminant type, regulatory compliance and workplace safety, manufacturers can optimise their cleaning processes, protect their workforce, and improve overall production efficiency.

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# Unlocking the future of component cleaning with The Newborn

Meet The Newborn, a cutting-edge solvent-based cleaning machine designed for complex and high-volume component cleaning. With its innovative features, The Newborn is set to redefine how industries approach cleaning challenges. Graham Fraser, managing director of Fraser Technologies, explains what makes The Newborn unique and why it's a game-changer in the market.

### Graham, can you tell us what inspired Fraser Technologies to bring The Newborn to the market?

Graham Fraser: "For years, we've seen a gap in the cleaning market. Traditional solvent machines, like those using Perc or hydrocarbons, were either too rigid in their applications or too costly to maintain. We wanted to offer something that wasn't just a new machine, but a completely new approach; something adaptable, efficient and future-proof. The Newborn embodies all of that."

### What sets The Newborn apart from other solvent-based cleaners on the market?

The Newborn's patented cooling system is a standout feature. Unlike other machines that need bulky external abatement systems, our built-in cooling technology captures solvents internally. This makes the process more efficient, reduces emissions and eliminates the need for complex external setups. Essentially, it simplifies everything.

### You mentioned future-proofing as a key benefit. Could you elaborate on that?

Absolutely. One of the biggest challenges for businesses is keeping up with regulatory changes, especially concerning solvents. With The Newborn, companies don't have to worry. It's designed to handle multiple solvents, Perc, modified alcohol, hydrocarbons with minimal adjustments. You can switch from one solvent to another with the push of a button, making it versatile and adaptable to future regulations.

### How does The Newborn address common pain points in the industry, such as downtime and maintenance?

"One of the key benefits of The Newborn is its



continuous operation capability. Many machines currently on the market need to be shut down for hours for maintenance, which disrupts productivity. With The Newborn, you can run maintenance on-the-go, thanks to its dual stills and filters. This feature alone maximises uptime and keeps production lines moving. Plus, maintenance is straight-forward, designed to be user-friendly, with easy access to critical components, reducing the need for specialist intervention."

### Can you talk about the support available for The Newborn users?

"Support is a critical part of our offering. We provide full UK-based service and support, which means that if anything goes wrong, you're not waiting for an engineer to fly in from overseas. Our team is trained specifically on The Newborn, ensuring that customers receive prompt and expert assistance. We also offer a comprehensive service package that includes routine maintenance, chemical management and waste disposal, ensuring the machine operates at peak efficiency without the hassle for our customers."

Fraser Technologies is uniquely positioned to support customers in navigating the ever-evolving landscape of cleaning regulations, thanks to our deep industry expertise and proactive approach. With decades of experience in the cleaning sector, we understand the challenges that new regulations can pose, particularly around solvent use and environmental compliance. Our team stays ahead of the curve by



continually monitoring regulatory changes and adapting our solutions accordingly. We don't just sell equipment and cleaning fluids, we act as trusted advisors, guiding our customers through the complexities of compliance and helping them future-proof their operations. By partnering with Fraser Technologies, customers can be confident that they have the right expertise on their side to meet today's standards and be prepared for tomorrow's requirements.

### How does The Newborn fit within Fraser Technologies' range of cleaning solutions?

"The Newborn completes our offering, perfectly complementing our existing carefully curated range of equipment to ensure we have a solution for every cleaning need. Whether you're dealing with highly contaminated parts, sensitive components, or need to switch between different cleaning chemistries, we now have an answer. The Newborn bridges the gap, making sure that whatever your requirements, we can meet them with the right technology."

### What has been the feedback from initial users of The Newborn?

"Feedback has been incredibly positive. Customers love the sealed system design, which keeps emissions low and safety high."

### What are the top benefits of The Newborn for potential buyers to consider?

Here are the top ten benefits that really make The Newborn stand out:  
**Patented cooling system:** Efficient internal solvent recovery without external abatement.  
**Multi-chemical compatibility:** Easily switch

between solvents to adapt to future regulations.

**Fully sealed system:** Keeps emissions low, ensuring safety and compliance.

**Continuous operation:** Minimal downtime due to on-the-go maintenance capabilities.

**High throughput:** Designed for complex and high-volume cleaning tasks.

**Local UK support:** Full servicing and support within the UK, ensuring quick response times.

**Adaptability:** Future-proofs your investment against changing cleaning needs.

**Superior waste management:** Efficient solvent recovery minimises waste and environmental impact.

**Enhanced safety features:** Fully enclosed process that minimises operator exposure.

**The Newborn isn't just another cleaning machine; it's a leap forward in cleaning technology**

With its innovative design, future-proof



features, local support and commitment to safety, The Newborn offers a comprehensive solution that meets today's needs and anticipates tomorrow's challenges. Fraser Technologies continues to lead the way in offering adaptable, efficient and sustainable cleaning solutions, now with a complete range to suit any application.

### Unlocking the future of component cleaning with The Newborn

Graham Fraser brings a wealth of experience that sets the company apart as a leader in the industry. With over 30 years of hands-on expertise in the cleaning and degreasing sector, Graham Fraser has seen the evolution

of technology and regulations firsthand. His deep understanding of both the technical and regulatory landscapes enable Fraser Technologies to provide unparalleled support to its customers.

His commitment to staying ahead of industry changes means that Fraser Technologies is always prepared to offer the latest and most compliant solutions.

He states: "Regulations are constantly evolving, and it's our job to ensure our customers are not just compliant but also optimised for the future. With our knowledge and experience, we can anticipate challenges and provide tailored advice, keeping our customers ahead of the curve."

This level of insight and foresight, driven by Graham Fraser's dedication, ensures that Fraser Technologies isn't just a supplier but a strategic partner, helping businesses navigate the complexities of compliance with confidence.

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# Flexible product family for stable cleanliness with low cleaning unit costs

Ecoclean has expanded the cost-efficient EcoCcompact to include the L and XL model variants to meet the diverse requirements of general industry. The new product family with three working chamber sizes and batch weights of up to 150 kg enables the capacity and cleaning performance to be adapted precisely to company-specific requirements. Sophisticated equipment details, an effective washing mechanism and high energy efficiency keep cleaning unit costs low. In addition, the compact plug and play solvent systems can be easily converted from hydrocarbon to modified alcohol.

The diverse product range of the general industry includes workpieces produced by casting and machining, stamped, bent, pressed and deep-drawn parts, hydraulic and pneumatic components as well as fasteners. Depending on the subsequent process or application, the parts manufactured from different materials must meet different but increasingly stringent particulate and film cleanliness requirements. High throughputs, increased demands on resource efficiency and, in some cases, low margins pose a challenge.

### Cost-effective and flexible cleaning

As a result, the cleaning process must ensure cleanliness in line with requirements in a stable, sustainable manner and at low unit costs. For these tasks, Ecoclean has expanded the cost-efficient EcoCcompact product family with the L and XL model variants. As with its smaller sister, it is easy to switch between hydrocarbons and modified alcohols, semi-polar solvents, during operation without any conversion work.

The two new, compact plug and play solvent systems have working chambers with diameters of 650 (L) and 750 mm (XL), enabling batch sizes of 650 x 470 x 300 mm in the L version and 650 x 470 x 400 mm in the XL version. The maximum batch weight for both systems is 150 kg. Powerful, frequency-controlled flood pumps ensure fast filling and emptying of the working chamber. During standard injection flood washing, they generate a high mechanical cleaning effect. This can be specifically supported by an optionally integrated, frequency-controlled rotary drive for fabric rotation and



*The cost-efficient EcoCcompact has been expanded to include the L and XL model variants for the wide range of cleaning tasks in general industry. With well thought-out equipment details, an effective washing mechanism and high energy efficiency, the systems ensure low cleaning unit costs.*

positioning. Adapted to the cleanliness requirements, the systems can also be equipped with all available process technologies for solvent cleaning, such as ultrasound and PPC.



*The vertical integration of the two standard flood tanks reduces sump formation and prevents dirt pockets, resulting in a longer service life for the baths. The increased distillate output of up to 180 l/h and the continuous oil discharge as standard also contribute to this in the L and XL versions.*

The increased distillate output of up to 180 l/h and the continuous oil discharge as standard also contribute to the high capacity and performance of the L and XL versions. The vertical integration of the flood tanks also offers advantages. It reduces sump formation and prevents dirt pockets from forming. The result is a longer service life of the baths and thus a reduction in operating costs.

For needs-based cleaning and preservation, the two flood tanks included in the basic version of all EcoCcompact can be supplemented by a third, fully integrated without increasing the installation area. They each have filtration in the supply and return lines with bag or high-performance filters as well as bypass filtration. Speaking of space requirements, at 4,100 x 1,900 x 2,650 mm and 4,400 x 2,100 x 2,655 mm respectively, the new versions are also extremely economical.

### Impressive energy efficiency and sustainability

The EcoCcompact product family also impresses with its comparatively low energy consumption, which has been achieved through optimised system technology. This includes the fact that the flood tank two and the optional third tank are heated with heat recovered from the distillation process.

Like all systems for solvent cleaning, the L and XL versions of the EcoCcompact are characterised by high flexibility in terms of material compatibility. This means that components made of different materials can be cleaned in one system. In addition, they can also be used in regions where the consumption of water as a cleaning medium and/or the disposal of wastewater from cleaning applications is regulated. A prerequisite is the suitability of the solvent cleaning, which can be verified by Ecoclean through cleaning tests in the worldwide test centres.

The SBS Ecoclean Group develops, produces and sells future-oriented plants, systems and services for industrial component cleaning and surface treatment as well as customised automation solutions. Another business area is the development and series production of efficient alkaline electrolysis systems for the decentralised production of green hydrogen. Innovation is driven by the two competence centres based in Germany, which support the global Group companies with technical expertise, research and pioneering developments. The cleaning

Overview EcoCcompact Series	EcoCcompact	EcoCcompact L	EcoCcompact XL
Outer dimensions (LxWxH)	approx. 3,200 x 1,900 x 2,450 mm	approx. 4,100 x 1,900 x 2,650 mm	approx. 4,400 x 2,100 x 2,655 mm
System weight	approx. 3,500 kg	approx. 4,500 kg	approx. 5,000 kg
Batch (LxWxH)	530 x 320 x 250 (200) mm or 470 x 320 x 250 (200) mm or 4x Növel on adapter	1 basket 650 x 470 x 300 mm or 2 baskets 520 (470) x 320 x 200 mm next to each other	1 basket 650 x 470 x 400 mm or 2x 2 baskets 520 (470) x 320 x 200 mm one above the other
Batch weight	max. 80 kg		max. 150 kg
Working chamber size	ø550 mm	ø650 mm (on request ø550 mm)	ø750 mm
Throughput	up to 10 batches/h	up to 8 batches/h	7-8 batches/h
Ultrasonic power	1 kW / 2 kW	1.5 kW / 3 kW	3 kW / 6 kW
Distillate output	max. 60 l/h		max. 180 l/h
Continuous oil discharge	optional		included
Oil input capacity	max. 1.5 l/h		max. 5 l/h

*With three working chamber sizes and batch weights of up to 150 kg, the EcoCcompact product family makes it possible to adapt the capacity and cleaning performance precisely to company-specific requirements.*

solutions help companies from a wide range of industries such as mechanical engineering, the semiconductor supply industry, precision optics, medical technology, the automotive and supplier industry, micro and precision engineering, aerospace and fastening technology around the globe to produce efficiently and sustainably with high quality.

Ecoclean's success is based on innovation, cutting-edge technology, sustainability, customer proximity, diversity and respect. The

group of companies combines the Ecoclean, UCM and Mhitraa brands. It has eleven production sites in Germany and eight other countries worldwide and employs around 900 people.

**Ecoclean GmbH**  
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**www.ecoclean-group.net**

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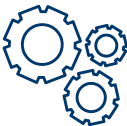
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# MecWash solves cleaning challenge for additive manufacturer Materials Solutions

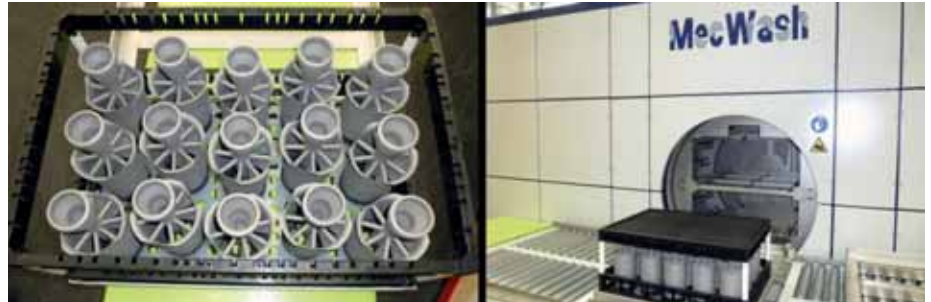
MecWash Systems worked alongside pioneering additive manufacturer Materials Solutions to create a bespoke component cleaning system and brand-new chemical process to address the unique challenges of 3D printing.

Additive Manufacturing (AM) has enabled companies to manufacture components with complex geometric shapes customised to meet challenging environments in aerospace, power generation and motorsport. By creating components layer by layer, engineers can literally think laterally during the design process. Components can be created from the inside out, incorporating integral features in places which traditional casting and machining simply can't access.

The manufacturing process melts metal powders layer by layer, using lasers to trace slices of CAD models in layers of powdered high-performance metal alloys to form solid objects. The AM printing process leaves powder particles as residue which must be cleaned off. However, the metal used by Materials Solutions is incredibly sensitive and can stain when cleaned.

The question is how to clean the various complex parts in a mix of sensitive super alloy materials without staining. This was the challenge set by Materials Solutions Ltd, a leading AM company based in Worcester.

The in-house chemist at MecWash, Dave Pawson, drew on a lifetime of experience to solve the problem. His understanding of chemical wash solutions is unparalleled in the industry, having created thousands of unique solutions for MecWash customers over the years.



*Materials Solutions work with some of the biggest names in global industry to solve complex engineering challenges through additive manufacturing.*

When presented with the chemical conundrum at Materials Solutions and understanding the nature of the compounds involved, Dave Pawson set upon solving the problem. He states: "Here at MecWash, we love to embrace new challenges and it is always exciting when trying to find a solution for customers complex washing requirements. We were determined to create a process that ensured the impressive components created by Materials Solutions would be entirely free from residual materials.

"The incomplete removal of residuals, such as powder, dye penetrant and coolant, can severely affect the component's functionality and integrity. We took great care in analysing the samples to identify the opportunities and how we could attain a high-quality wash of the components.

Paul Jarratt, sales manager at MecWash, has worked with Dave Pawson for twenty years. He says: "We work with our customers to develop unique processes through evolution. Materials Solutions needed a parts washing system and an original chemical

compound that could effectively clean their intricate components. After close consultation, the MWX600 was agreed to be the ideal system for the application to accommodate the range of component sizes.

"The MWX600 is phenomenally sophisticated, with ultrasonic cleaning, high flow washing, extended rinsing and vacuum drying, all designed to provide the highest quality of component cleaning. The large wash chamber has a maximum load weight of 250 kg, which is ample for the components manufactured by Materials Solutions.

Materials Solutions work with some of the biggest names in global industry to solve complex engineering challenges through additive manufacturing.

"The business is currently creating components the size of a microwave and is planning to expand their capabilities to be able to manufacture components as big as a washing machine. I am excited to follow the progress of Materials Solutions in the future, and we will work alongside them to support their component cleaning needs as the business grows," explains Paul Jarratt.



*The MWX600 is designed to provide the highest quality of component cleaning.*

Materials Solutions was impressed with the detail of the approach by MecWash: "We have been in business since 2006 and we are experiencing exceptional growth currently with a high demand for our work. This means that downtime would be detrimental to our productivity.

"As one of the premier metal additive service providers in the world, we work with some of the biggest names in global industry to solve complex engineering challenges. We have a strong focus on functional high-end prototypes and serial production applications for our services. The methods we use to design and manufacture components for our customers are second-to-none. The process is quicker, and more accurate than traditional casting methods.

"Working with high strength and high temperature materials to create reliable components are our daily business. We have almost twenty years' experience of metal additive manufacturing which gives our team an immense understanding of the materials used in the process. We specialise in designing, creating and the optimisation of the components.

"Before working with MecWash, the components at Materials Solutions often required manual input, which slowed down productivity and in this instance, mishandling this process could damage components. The components often feature very complex geometries, such as internal channels or lattice structures, which are challenging to clean thoroughly using conventional methods.

"The insights and support from MecWash have been exceptional and the cleaning results have boosted our efficiency. The understanding of the chemical compounds from MecWash has been transformative for Materials Solutions."

John Pattison, managing director of MecWash, comments: "Additive manufacturing is a buoyant sector of industry and Materials Solutions are well positioned to lead within the market. Our technical expertise is at the heart of our approach to cleaning components and the challenge of washing additive manufactured components is a different proposition to traditional ones. "The MWX600 is a world-class system that meets the most difficult cleaning challenges in



*The addition of the MecWash MWX600 has transformed the component cleaning at Materials Solutions.*

industry. Released in 2024, the MWX600 is the result of three decades of expertise, innovation, and customer-driven development at MecWash. Its unmatched capacity and precision cleaning provides a new level of performance for manufacturers.

"We work closely with our customers throughout all stages of the manufacturing to ensure we achieve the best results possible. MecWash will continue to work alongside Materials Solutions to scale up the cleaning capabilities as the demand for their components increases."

**MecWash**

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## Cleaning intricate, delicate and high-value parts

In modern manufacturing, the cleanliness of parts is crucial to product quality and operational efficiency. However, cleaning intricate, delicate, or high-value components presents unique challenges. Ultrasonic cleaning has emerged as a groundbreaking solution, addressing these issues with precision and care.

### The challenges of cleaning specialised parts

#### Intricate parts

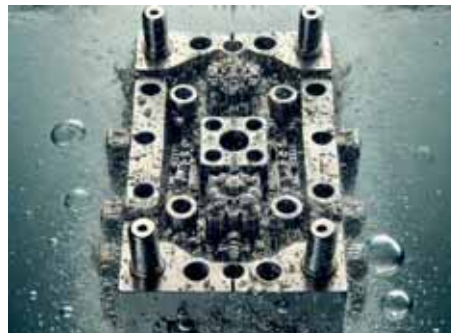
Manufacturing often involves components with complex geometries, such as intricate moulds and turbine blades. Traditional cleaning methods, like manual brushing or spray washing, struggle to reach tight crevices and internal cavities, leaving contaminants behind.

#### High-value parts

Expensive components and precision tools require meticulous cleaning without risking damage. Even minor defects caused during cleaning can lead to costly replacements or compromised performance.

#### Delicate materials

Parts made of thin metals, plastics, or glass are particularly vulnerable to scratches, deformation, or chemical degradation when exposed to harsh cleaning methods.



#### Why ultrasonic cleaning?

Ultrasonic cleaning works using high-frequency sound waves in a cleaning solution to create microscopic bubbles. These bubbles implode on the surface of a part, creating a powerful yet gentle cleaning action known as cavitation. Together with the right non-hazardous cleaning solution, this process offers several distinct advantages.

#### Non-abrasive cleaning

The acoustic cavitation effect removes contaminants with minimal contact, making it ideal for fragile or intricate components with no abrasion. There's no risk of scratching or damaging surfaces, even on soft or delicate materials.

#### No hazardous chemicals

Ultrasonic parts washers can eliminate the

need for aggressive chemicals. Water-based cleaning solutions, combined with ultrasonic action remove oils, grease, carbonised residue and other particulates, making it safer for workers and the environment.

#### Effective at lower temperatures

Ultrasonic parts cleaners work efficiently at lower temperatures compared to traditional methods, protecting heat-sensitive materials while reducing energy consumption.

#### Uniform cleaning

Unlike manual or spray methods, ultrasonic cleaners reach every part of a component, ensuring consistent cleaning results even for intricate parts cleaning.

#### Automated cleaning

Ultrasonics are automatic cleaning machines. Once loaded with parts for cleaning, the operator can set the cleaning time and temperature and then leave the machine to do its work. This frees staff to work on other tasks and improves productivity.

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# ANCA co-founders Patrick Boland and Patrick McCluskey awarded Medal of the Order of Australia

Australian technology pioneers share their inspiring story in a heartfelt video retrospective



ANCA, an Australian advanced manufacturing leader, has proudly announced that its co-founders, Patrick Boland and Patrick McCluskey, have been awarded the Medal of the Order of Australia (OAM) in the 2025 Australia Day Honours List. Known as “The Two Pats,” their visionary leadership has propelled ANCA to the forefront of global technology, demonstrating that advanced manufacturing can not only thrive in Australia but also contribute to high-value products, international competitiveness, meaningful careers, and sovereign industrial capabilities.

### A lifetime of innovation and dedication

The dynamic partnership of Pat Boland and Pat McCluskey, combining academic expertise and practical ingenuity, has driven ANCA's success for over 50 years. Their



passion for innovation and engineering excellence has led to the development of world-first technologies that have revolutionised the cutting-tool industry. Notable innovations include groundbreaking in-machine measurement that disrupted and shaped the market, setting new standards in precision manufacturing.

Success didn't come overnight. By targeting a niche global market, adopting robotics and applying innovative solutions to the machine world, long before the internet era, they brought their ambitious vision to life.

Today, ANCA continues to lead the industry, driven by a culture of innovation, talent investment and a commitment to “dreaming and having fun.”

### Celebrating achievements

Patrick Boland OAM, who holds a Master's in electrical engineering from Melbourne University, is one of a handful of life members of the Australian Manufacturing Technology Institute Limited (AMTIL). He served as AMTIL's president from 2010 to 2016 and was a founding member of the Future Manufacturing Industry Innovation Council from 2008 to 2014.

Patrick McCluskey OAM, the practical and design-focused counterpart, began his career as an apprentice working on fuses and radios. Today, he leads the mechanical design of ANCA's advanced machines and mentors the engineering team, fostering the next generation of innovation. He also spearheads ANCA's apprenticeship program, emphasising the company's commitment to skill development. In his spare time Pat McCluskey wrote and self-published a memoir 'Trust' detailing his early beginnings growing up in a Ballarat orphanage to his move to Melbourne with a Diocesan Scholarship through to starting his apprenticeship with Department of Supply.

### Recognition and gratitude

“This is an incredible honour,” says Patrick Boland. “I see it as recognition of the work ANCA has done over 50 years to sustain an advanced manufacturing business in Australia. By competing on smarts and riding the wave of technology, we've achieved an incredible journey filled with immense fun.”

Patrick McCluskey adds: “ANCA is my life and this award validates the countless hours, challenges and triumphs that have shaped our journey. I'm thrilled to have built a

company of over 1,300 people recognised globally for its technology solutions. From apprentices to seasoned professionals, I'm grateful to have them as part of our team.”



### ANCA's legacy and future

The awards coincide with ANCA's 50th anniversary and the co-founders' 75th birthdays. With 13 registered patents and three pending, including a recent patent for a Motor Temperature Control algorithm in the US and China, ANCA continues to lead the field in advanced technology.

Headquartered in Melbourne, Australia, ANCA's offerings include CNC tool and cutter grinding machines, laser markers, automation solutions, motion controls and manufacturing services. These technologies are critical to industries such as automotive, aerospace, electronics, medical devices and cutting-tool manufacturing.

Investing 10 percent of profits into research and development, ANCA is committed to fostering STEM talent through partnerships with RMIT, Melbourne and Monash universities. Its robust apprenticeship programs further strengthen Australia's skilled workforce, ensuring groundbreaking innovations continue to emerge from this “hidden gem” of Australian manufacturing.

### Watch their story

Hear directly from Patrick Boland and Patrick McCluskey about their journey and legacy: [https://www.youtube.com/watch?v=yDaB\\_eJo4D0](https://www.youtube.com/watch?v=yDaB_eJo4D0)

\* Catherine Butterfield ghost wrote the memoir Trust with Patrick McCluskey

### ANCA UK Ltd

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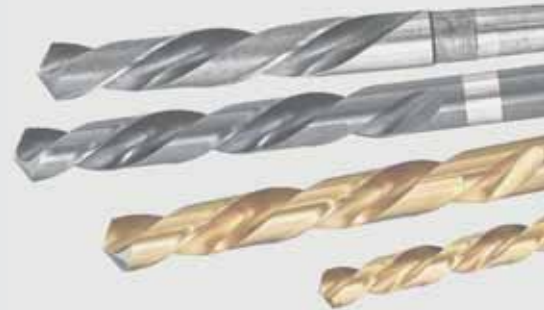


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# High performance grinding wheels for carbide and HSS machining



Effgen G-Run II Hybrid Diamond and CBN grinding wheels.

## Effgen G-Run II Hybrid Diamond and CBN grinding wheels

The tool and cutter manufacturing industry has been aware of the benefits offered by Hybrid, synthetic resin/metal bond, grinding wheels for years. Effgen Lapport introduced its range of G-Run wheels in 2015 which was updated in 2024 with the G-Run II range. Through 2024/25, TSH Engineering Services Ltd have introduced the G-Run II range of

wheels to UK tool and cutter manufacturers, to trial against existing suppliers, including economic resin bonded wheels to premium hybrid competitors.

The Effgen G-Run II Hybrid product combines the advantage of synthetic resin and sintered metal bonds, offering enhanced grain retention, wear resistance, thermal resistance and thermal conductivity. Yet, still offering improved dressing capacity,

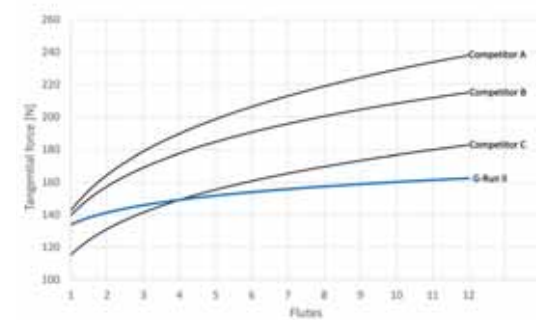
the specific combination of different bonding properties increases the life of the grinding tool.

### Effgen G-Run II

- Powerful metal-hybrid bonding system.
- Used for diamond and CBN applications.
- Low grinding forces and minimised dressing/conditioning cycles.
- Cool grinding.
- Longer wheel life.
- Lower machining/abrasive costs.

### Effgen - Grinding trial example:

Tangential force Ft at Q'w = 11 mm<sup>3</sup>/(mm\*s)



Machine: Haas Multigrind

Coolant: Oil

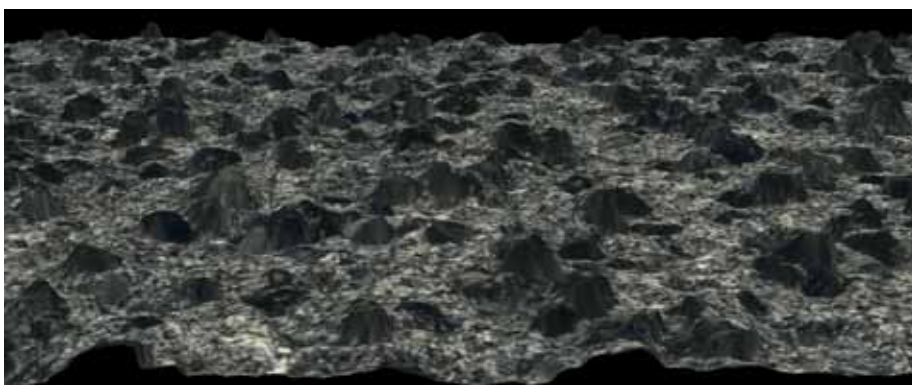
Carbide: K10 1A1-100-10-10-D54-C100

Q w = 11 mm<sup>3</sup>/(mm\*s)

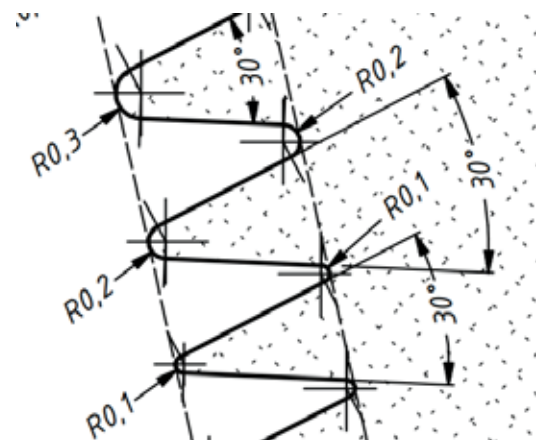
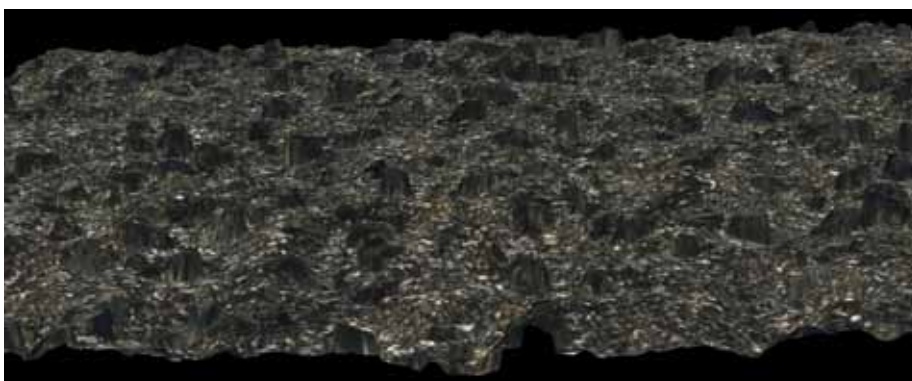
ae = 3 mm, ap = 4 mm vf = 220 mm/min

The G-Run II shows the lowest grinding forces while maintaining constant grinding behaviour.

The G-Run II bond offers the opportunity to profile and sharpen the wheel face using EDM.



Above: EDM sharpened, Ra = 1,25 µm Below: SiC sharpened, Ra = 1,02 µm.



Industrial Tooling Corporation Ltd (ITC) based in Tamworth, Staffordshire, prides itself on producing premium tools for its customers offering improved quality, productivity and cost.



ITC grinding technician, Chris Allen examining finished slot drill flutes, machined using the Effgen G-Run II type 1A1 diamond grinding wheel.

In addition to the range of tools it supplies from stock, it has its own manufacturing facility using top of the line CNC grinding machines including, WALTER, Rollomatic and Anca machines, to customise existing tools or manufacture specials as required by its customers.

Following discussions between TSH Engineering Services Ltd and ITC, both Kevin Ford, production manager and Martin Williscroft, production engineer, made it clear that ITC is always striving to improve the quality of the tools it manufactures on site while optimising the manufacturing process and cost of the tool. Based on this, the G-Run II product was chosen to trial, as the premium product from Effgen for tool and cutter grinding for carbide and HSS.

ITC ordered two wheels for trial, which were tested extensively by Chris Allen, one of its grinding technicians. Chris Allen comments: "With these wheels we were able to improve cycle time, surface finish and they required minimal dressing" based on these results, ITC are ordering more wheels in other shapes.

TSH Engineering Services Ltd continue to support cutting tool manufacturers across



the UK optimising the Effgen range of tool and cutter grinding wheels on offer, including the G-Run II range of hybrid grinding wheels, improving quality, productivity and abrasive cost.

**Effgen Lapport – UK Agent:**  
**TSH Engineering Services Ltd**  
**Email: sales@tsh-esl.co.uk**  
**www.tsh-esl.co.uk**



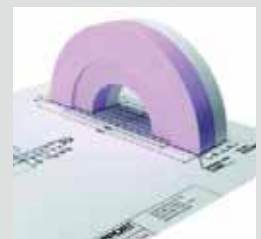
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## Automation solution for cylindrical precision tools from WALTER

With the new "Automated Tool Production (ATP)" system, WALTER now offers an automation solution for cylindrical precision tools. ATP is the innovative solution for networking grinding, eroding and measuring machines from WALTER, but also for machines from other system partners upstream and downstream in the production process.

Increased efficiency, competition and a shortage of skilled workers make a higher degree of automation in industrial production absolutely essential. The new "Automated Tool Production (ATP)" system from WALTER requires no additional floor space, it can be integrated into existing system layouts and is also suitable as an interface for machines from other manufacturers. WALTER works with strong partners to develop this automation solution.

### Components

The system control is based on the OPC-UA data model FLAMES. It consists of at least one robot cell, ATP ROBOCELL, accessible from the front for automatic loading and unloading of the machines and at least one autonomous, mobile transport robot, ATP AMR, for transporting the tool pallets and individual parts between the storage and processing stations. This also includes a standardised communication model between the machines and the ATP AMR transport robot, as well as a control system for higher-level data and process control.

### Maximum flexibility

WALTER customers can easily retrofit the ATP system in their existing production facilities without having to change the existing system layout.

### Automatic tool processing, measuring and correction

A separate removal station for the in-process exchange of individual parts between the measuring and processing machine enables automatic correction and thus complete closed-loop processes. In the ATP ROBOCELL, a multi-range gripper contributes to the high flexibility of the system. It covers a large tool diameter range without changing the gripper unit and can exchange the collets at the same time.

"We have developed this innovative system in close cooperation with strong partners. Our expertise in tool machining and measurement and the know-how of our partners in automation now offers customers an automation solution that is state-of-the-art in every respect," explains Simon Kümmerle, strategic product manager of grinding technology at WALTER.

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Scan the QR code for more information on the ATP system



ATP system from WALTER with the HELITRONIC VISION 400 L grinding machine and the HELICHECK PLUS measuring machine (both with ATP Robocell) as well as the ATP AMR mobile transport robot.

## WALTER to host Open House event in Tübingen, Germany

On 6th and 7th May 2025, Walter Maschinenbau GmbH is inviting customers and interested parties to an Open House at its headquarters in Tübingen. Under the motto "Super-hard materials", other innovations such as the Automated Tool Production (ATP) automation solution and the HELICHECK NANO fully automatic measuring machine for micro and nano tools will be on display alongside the new innovative VISION LASER processing machine. In addition, several other exhibits from the current machine portfolio, which primarily includes tool grinding and eroding machines, will also be presented.



A comprehensive supporting programme with exciting presentations, informative specialist talks and discussions awaits you on both days. Catering will also be provided. Further information about the Open House and registration are available on the website.

### About Walter Maschinenbau GmbH

Walter Maschinenbau GmbH is one of the world's leading manufacturers of tool grinding machines, tool erosion machines and laser processing machines as well as optical CNC measuring machines. The company is known for its innovative manufacturing technologies and offers solutions for customers from various industries, such as engineering, mechanical, automotive and aerospace.



# High precision gear cutting tools from SCHNEEBERGER

Grinding small-module gear cutting tools in AAA quality is a particular challenge, especially in carbide. SCHNEEBERGER knows the necessary processes and supplies the right equipment with the Gemini NGM. The carbide skiving cutter is produced from the solid  $\varnothing 20$  blank in a single clamping operation. The tool with  $\varnothing 16$  head circle diameter and module 0.17 achieves AAA quality.

The profile is created line by line using a sophisticated process known as topological grinding. The metal-bonded 14EE1 diamond wheel adapts to the target contour. Profile corrections are possible without a dressing process. The grinding process is based on a 3D model, which is imported using Quinto Qg1 CAD/CAM software.

For profiling larger modules, classic generation grinding with a dressed forming wheel is still more efficient. Here too, SCHNEEBERGER has years of experience with the world's leading manufacturers.

The rock-solid Gemini NGM satisfies the

demand for maximum precision. Equipped with the latest linear drive technology and a thermally stable design, it masters the task with flying colours.

SCHNEEBERGER is a Swiss, family-run business devoted to grinding. Since Walter Schneeberger founded the company in Roggwil, Switzerland in 1923, it has worked with great consistency and success on creating added value for its customers. Today, it works for its customers in practically every developed country.

Service-oriented, it has a dense network of service station facilities local to its customers. The focus of all of the development teams in the company headquarters and the in-house manufacturing enable it to implement new ideas quickly. It relies on its own expertise in many special areas including the development of its own grinding software Quinto.



The company celebrated its 100th anniversary in 2023.

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# Machine shops profit from near net shape forgings

Machine shops often need open die forged parts for a variety of applications, including large, custom parts, small quantity runs, or when high strength and durability are required. When this is the case, machine shops often contract with forgers for “as forged” parts and then perform finish machining and other secondary operations to achieve the precise tolerances, dimensions, and surface finishes required by the customer.

However, purchasing a near net shape forging may be a better option, one that allows machine shops to reduce costs and improve their profit margins.

Near net shape forgings are seamless rolled rings or open die forgings with dimensions close to the final shape of the finish machined part. “As forged” components, on the other hand, often have a coarse surface finish, 500 RMS or more and may include metal scales and very uneven surfaces that must be machined away. This increases the cutting time, tool wear and cutting fluid used, which eats into profits. When a customer is on a tight budget, extra stock material that becomes metal swarf can mean the difference between winning a job and losing one.

Fortunately, near net forgings are available with tolerances within 3 mm on all dimensions and a much finer surface finish. Although the initial price may be higher, the reduced machining time, wear, elimination of

waste and faster delivery time to the customer translate into cost savings and profit improvements. Reduced machining time increases machine availability for additional projects as well.

Near net forgings are more than just ODs, IDs and lengths. They include steps on round shafts, blocks, squares, rectangles, hubs, wheels, cylinders, blind cylinders, flanges, drive ends, tending ends and complex shapes. All Metals & Forge is an ISO 9001:2015 and AS9100D-certified manufacturer of open die forgings, seamless and contoured rolled rings and complex forged parts with stock allowances or near net shape tolerances.

### Machining open-die forgings

Open die forgings and seamless rolled rings play a crucial role as components in gears, turbines, bearings, clutches, brakes, couplings, drives, flanges, valves, machines and rollers. Industries that rely on these types of parts include aerospace, automotive, defense, energy, engine and turbine, food processing, mining, oil and gas, petroleum, power generation, pulp and paper and shipbuilding.

Given the critical role of these components, open die forgings provide a higher level of structural integrity than any other metalworking process by eliminating structural voids and improving the directional grain flow and grain size within the material.

Seamless rolled rings, like those made by All Metals & Forge Group, an ISO 9001:2015 and AS9100D-certified manufacturer of open die forgings, seamless and contoured rolled rings and complex forged parts, for example, resist wear, fatigue and stress, enabling better performance. Depending on the metal and alloy, the rings or forgings are also resistant to thermal and chemical damage, which further extends longevity while reducing the need for maintenance, repair, and replacement.

Open-die forging is particularly advantageous when fabricating large, custom components. All Metals & Forge Group can produce seamless rolled rings or contoured rolled rings up to 200 inches in outside



diameter, and custom forgings up to 40 feet long or 80,000 lbs. Small parts down to roughly one foot cubed can be delivered as near net shape forgings as well.

Near net shape forgings may be slightly more expensive until all the machining cost factors and savings are calculated into the final part price.

When parts are machined from a basic profile, such as a block, round, or rectangle, significant stock can be lost, but you are still required to pay for the excess material. With open die forging, the part is shaped by the dies, significantly reducing material waste.

When the job is for multiple parts, near net shape savings begin to add up. There are also unseen savings, such as the time to reorder cutting bits, restock cutting fluids, recycle metal swarf and the opportunity to increase machine time availability.

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# Takeda Industries takes on regrinding and manufacturing with ANCA FX5 Linear

Takeda Industries, led by President Ken Takahashi, has built a strong reputation for its expertise in regrinding carbide end mills. This reputation has now expanded into tool manufacturing, thanks to its adoption of ANCA's FX5 Linear grinding machine.

The journey began with a request from a major user's central grinding division, which set the stage for Takeda's early success. Over time, its focus on quality and precision helped it to gain the trust of both major corporations and small to medium manufacturers. Today, the company maintains a 6:4 balance between tool regrinding and manufacturing, marking a significant evolution from its early days.

## From regrinding to manufacturing

Ken Takahashi discusses the company's progression: "Initially, we were regrinding insert tips, but by leveraging our network, we began receiving orders for carbide end mills. By the early 2000s, our focused sales efforts allowed us to specialise in regrinding tools with shafts."

Takeda Industries soon expanded into manufacturing tools, particularly end mills. Major tool manufacturers began requesting modifications, such as adding a radius (R) to straight end mills. This shift propelled the company into end mill manufacturing, where it quickly built a strong track record.

"We visit over 40 customers weekly to secure orders," Ken Takahashi explains. "Including trading routes, we regrind around

2,000 tools monthly and manufacture up to 800 tools during busy periods."

The introduction to ANCA machines came eight years ago when Takeda Industries was exploring opportunities to scale their manufacturing capabilities.

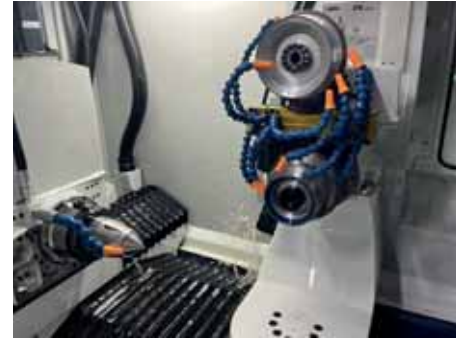
"At the time, we were focusing on mass-producing tools. Through industry connections and observing the endless potential of ANCA's software, we began seriously considering adopting an ANCA machine," explains Ken Takahashi.

In December 2022, the company introduced the FX5 Linear, a decision that has transformed their operations. Ken Takahashi, at the age of 68, personally stepped into the role of operator, ensuring a smooth integration of the new technology.

FX5 Linear enables continuous operation for Takeda Industries

The FX5 Linear's advanced features, including its simple loader and LaserUltra on-machine measurement, enabled Takeda Industries to achieve continuous tool manufacturing operations for the first time.

"The machine automatically adjusts if a tool is outside tolerance, which is a game-changer. It's particularly effective during nights and holidays, allowing us to maximise productivity. Our production volume has increased significantly, several times more than before. We simply can't afford not to use it," Ken Takahashi emphasises.



He also praised the machine's performance: "The axis feed speed is dramatically faster compared to conventional machines. For instance, the speed of cutting grooves is incomparable. The axis configuration is also highly efficient, allowing precise, close-range movements that improve machining accuracy."

Ken Takahashi highlights the critical role of ANCA's technical support during the transition: "We faced challenges early on, but ANCA Japan's technical staff provided immediate and effective support. Thanks to their assistance, we've been able to master the machine and fully utilise its capabilities. I have nothing but gratitude for their dedication."

With the FX5 Linear now a core part of their operations, Takeda Industries is focusing on training younger staff to ensure the company's continued growth.

"At 68 years old, I may be the oldest ANCA operator," Ken Takahashi says, adding that he remains committed to mentoring the next generation of operators to carry forward the company's success.

Takeda Industries' adoption of the FX5 Linear reflects a strategic shift toward innovation and efficiency. By combining advanced technology with decades of expertise, the company has positioned itself to meet growing demands in both regrinding and manufacturing. With the FX5 Linear at the heart of its operations, Takeda Industries remains ready to embrace the future of precision tool production.



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# Six benefits of value-added metal finishing services

Many types of finishing techniques can add value by enhancing the durability, appearance and functionality of metal components. From chrome plating to aluminum anodising, there are many ways to enhance metal parts. However, additional services like lab testing and quality control can further improve your finished product.

These services offer valuable benefits like better performance, increased lifespan and reduced production costs. With CRC Surface Technologies, you can find them all under one roof. Here's why you should choose a company that offers value-added services for your next metal finishing project.

### What are the benefits of value-added metal finishing services?

#### 1: Streamlined production process

Choosing a provider that offers value-added services helps streamline the overall production process. CRC handles multiple aspects of the finishing process, including assembly, packaging, delivery and more. Streamlining the production process helps reduce delays, ensures consistent quality and improves efficiency. It also eliminates the need for multiple vendors, saving you time and money.

#### 2: Improved quality and performance

Value-added metal finishing services focus on enhancing the quality and performance of the finished product. Services like precision machining and specialised testing add value by ensuring that your components meet and exceed industry standards.

For example, Non-Destructive Testing (NDT) helps detect flaws without damaging the finished parts. On-site lab tests can also be performed to verify the composition and structural integrity of the finished product. Quality control measures like these will guarantee both reliability and durability, adding significant value.

#### 3: Enhanced customisation

Value-added services also allow a high degree of customisation, so you can tailor your finishes according to the application.



This can include masking, which protects specific areas of a component during the finishing process, so you don't need to coat the entire part.

Finishes like precision ID/OD grinding can improve dimensional accuracy for tight tolerances. Enhanced customisations can also extend the product's lifespan and enhance its performance in harsh environments.

#### 4: Cost efficiency

Although value-added services are an additional expense, they can lead to significant savings in the long run. Combining multiple services under one roof helps minimise production errors and eliminates the need for costly reworking. In many cases, value-added services can reduce the need for future maintenance or repairs, lowering your long-term costs even further.

#### 5: Faster turnaround times

In aerospace, defense, automotive and many other industries, time is of the essence. By offering multiple stages of the finishing process in-house, a full-service metal finishing provider can significantly reduce turnaround times for your project. Not only does this speed up delivery, it also helps you coordinate your processing times so you can meet tight deadlines and rest assured that

your projects will be finished on time, every time.

#### 6: Compliance with industry standards

As a NADCAP-certified and ITAR-registered company, CRC Surface Technologies understands the importance of adhering to the strict standards and regulations required by many industries.

Value-added services like testing, certification and quality assurance help ensure that your finished components are compliant with industry standards such as ISO, ASTM, and military specifications. This compliance helps you mitigate risks and avoid costly recalls or regulatory issues down the line.

### Choose a metal finishing partner that adds value

Only an experienced and certified metal finishing provider can ensure high-quality, customised solutions that meet industry standards. CRC Surface Technologies, based in Phoenix, Arizona, USA, offers a wide range of on-site metal finishing services to help clients streamline their production process.

**CRC Surface Technologies**

**Tel: 001 602 253 4175**

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# ActOn Finishing introduces high-performance surface finishing solutions for Alloy Wheel Finishing

ActOn Finishing, a leader in surface finishing technology, is excited to unveil its latest alloy wheel finishing solutions, designed to deliver high-quality, repeatable finishes with superior efficiency. The AWP Vibratory Wheel Polisher and the WSB Alloy Wheel Blasting Machine offer an advanced, cost-effective solution for achieving polished and prepared surfaces for a flawless final finish.



Manufactured in the UK, these state-of-the-art machines cater to automotive manufacturers, refurbishers and aftermarket specialists, providing them with a fast, consistent and highly efficient approach to alloy wheel finishing. Whether it's restoring worn automotive wheels, enhancing new alloys, or prepping surfaces for coating, ActOn's innovative finishing solutions ensure outstanding results. "Our alloy wheel finishing technology represents a major step forward for the UK manufacturing industry," says Sid Gulati, managing director at ActOn Finishing. "By integrating precision polishing and surface preparation into a streamlined process, we are enabling manufacturers and refurbishers to enhance quality, reduce processing time and optimise efficiency. This is a significant advancement for businesses looking to stay ahead in an increasingly competitive market."

## Key features and benefits:

- **AWP Vibratory Wheel Polisher:** designed for a mirror-like finish, this system processes both forged and cast wheels up to 24", 610 mm, with a reliable and repeatable outcome.
- **WSB Alloy Wheel Blasting Machine:** provides an ideal surface for powder coating application, with a rapid 60-120 second process time per wheel.
- **Customisable Processes:** a tailored combination of polishing media, compounds and blasting materials ensures optimal results for different wheel conditions.
- **Cost & Time Efficiency:** reduces manual intervention while maintaining consistent, high-quality output.
- **Built for durability:** ActOn's machines are engineered in Britain with high-quality materials and expert craftsmanship.

With over 60 years of expertise in the surface finishing industry, ActOn Finishing continues to lead the way with its innovative, Made in Britain solutions. To experience the AWP Vibratory Wheel Polisher and WSB Alloy Wheel Blasting Machine in action, manufacturers can book a free finishing trial at ActOn's facility.



With over 50 years of experience in the finishing industry, ActOn Finishing is a UK-based specialist in surface finishing technology.

The company offers a comprehensive range of machinery, consumables and subcontract services, providing innovative solutions to enhance manufacturing processes worldwide.

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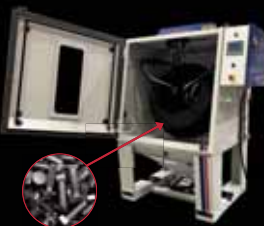


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