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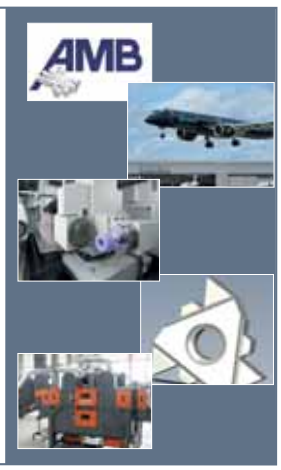

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Rollomatic GrindSmart 630RW3 with the new SMART STACKER

Flexible and autonomous

A powerful production tool
Rollomatic has set an ambitious task with its GrindSmart®630RW3 machine, equipped with the brand-new SMART STACKER. This model is a high-precision 6-axis grinding machine featuring a FANUC robot, offering exceptional flexibility. With its innovative kinematics, it is perfectly designed to handle a wide variety of applications.
Key features include:
• 2,250 tools • Six different endmills • One setup • Human intervention

The SMART STACKER, an advanced automation solution, takes production autonomy to an unprecedented level in the industry.

To highlight its capabilities, Rollomatic launched the SMART STACKER CHALLENGE: producing 2,250 endmills fully unattended. These tools are divided into various shank diameters and geometries and have been completed autonomously after the initial setup for all cutters by incorporating features offered in the "Road to Automation" program.

Rollomatic is a private Swiss company specialising in the design and manufacturing of high precision CNC machines for production grinding of cutting tools, cylindrical grinding and laser cutting of ultra-hard materials.

The company is customer-oriented and it provides complete manufacturing solutions for the grinding of precision tools and parts, including wheel dressing and measuring finished parts.

Manufacturing methods and precision assembly are based on its passion for Swiss engineering and craftsmanship.

Its philosophy is demonstrated by its teams in all stages over the life of the products, from design, through assembly and Lean Manufacturing and all the way to service and client advice and support. Rollomatic strives to build a relationship of trust and cordiality with its customers in a spirit of partnership.

With a 12,000 m² production site located in Landeron, it incorporates ultra-modern manufacturing equipment and technology. Sustainable development is part of the company's core values as photovoltaic panels cover all of the buildings and produces 50 percent of its own energy consumption.

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GrindingHub 2026 reaffirms its role as an international industry get-together

GrindingHub 2026 was a huge success with around 11,000 visitors, 462 exhibitors and four days of the trade fair filled with technology, networking and business opportunities, "With this stable result, the international trade fair for grinding technology has demonstrated the importance of specialised industry get-togethers for gaining insight, fostering personal connections and generating new ideas," states Dr Markus Heering, managing director of the organiser VDW (German Machine Tool Builders' Association).

International trade fair attracts high-quality visitors

Visitors travelled to Stuttgart, Germany, from 59 countries. Switzerland, Italy, France, Austria, and Turkey were particularly well represented. With 38 percent of visitors coming from abroad, GrindingHub once again underscored its position as a key international meeting place for the grinding technology community. The calibre of visitors was also impressive. 82 percent of respondents said they were involved in purchasing and procurement decisions and 37 percent of them plan to invest within the next six months. "This sends an important signal to the industry," Dr Markus Heering comments. "Companies are making targeted investments in productivity, efficiency and sustainability and this is precisely what GrindingHub offers."

The trade fair's significance remains strong

As was the case with the two previous events, visitors gave GrindingHub positive ratings in the visitor survey with many exhibitors sharing this view. The 462 companies from 28 countries showcased solutions, products and technologies in Stuttgart covering the entire grinding process chain from grinding machines and grinding tools to automation, measurement technology and software, as well as digitalisation, process peripherals and services.

The high level of exhibitor participation had already sent a strong signal in the run-up to the event: GrindingHub 2026 was fully booked on the exhibitor side and occupied three exhibition halls. Once again, it offered companies from international market leaders to young tech startups excellent opportunities to meet existing customers, establish new contacts and launch specific projects. Felipe Levin, managing director of Geibel & Holz GmbH, confirms this: "For us, GrindingHub is more than just a trade fair it is a central platform and an important forum for direct, industry-specific dialog with prospective customers and clients, as well as with partners and suppliers. This really shows just how much innovation and dynamism there is in our industry."

GrindingHub Americas attracts significant interest from exhibitors

The strong turnout of exhibitors and the high calibre of international visitors demonstrate that GrindingHub has established itself as a platform for grinding technology. This concept is now gaining prominence beyond Europe as well. Under the slogan: "Where precision meets progress", GrindingHub Americas marks the first trade fair in the United States dedicated exclusively to grinding technology and related processes. The premiere will take place in Cincinnati, Ohio from May 18th to 20th, 2027. "The response to our information session on GrindingHub Americas was exceptionally positive," notes Roland Bleinroth, president of Messe Stuttgart. "The packed hall and the strong interest shown by the exhibiting companies demonstrate that the GrindingHub concept is also in high demand in the North American market. This reinforces our commitment to our strategy and makes us very confident about GrindingHub Americas 2027."

Practical relevance as key to GrindingHub's success

The fact that the GrindingHub concept in Stuttgart is proving successful and, at the same time, opening up international opportunities is also due to its consistent focus on practical application. This was exactly what was evident in the supporting program in 2026. A particular highlight of the trade fair was the newly launched Grinding Solution Forum. It focused on specific industrial challenges and practical solutions. The forum addressed key issues facing the industry, including process stability, quality, automation, data, digitalisation, AI, cost-effectiveness and the future prospects of grinding technology.

The Grinder of the Year 2026 competition for up-and-coming talent also gave talented newcomers the opportunity to showcase their skills. The winner, Fabio Schoppet of K.-H. Müller Präzisionswerkzeuge GmbH, received a €3,000 education voucher. In addition, the joint booths, Grinding Solution Park Industry, Grinding Solution Park Science, Grinding Pavilion Switzerland and the Startup Hub, brought together industry, research, young companies and international partners in one compact space. With all formats, it became clear just how strongly efficiency, networking and digital applications are shaping the further development of grinding technology. This was also complemented by the launch of the AI-powered chatbot Hubi. It helped visitors find exhibitors, technologies and applications, thereby making it easier for them to plan their visit.

Grinding technology community looks to the future

"With its third event, GrindingHub has further solidified its position as the leading international trade fair for grinding technology," summarises Dr Markus Heering. "It brings together manufacturers, users, researchers, startups and international partners thereby fostering exactly the kind of exchange the industry needs for its continued development."

Christoph Blättler of Swissmem, the Swiss tech industry association and the driving force behind GrindingHub, agrees: "For all manufacturers and users of grinding technology, GrindingHub is undoubtedly the 'place to be'. Anyone who hasn't been here yet should definitely come next time."

The next opportunity to do so will be at GrindingHub from May 16th to 19th, 2028.

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ANCA appoints Gavin Smith as chairman of the board

ANCA Group has announced the appointment of Gavin Smith as chairman of the board. Gavin Smith brings extensive global leadership experience across engineering, advanced manufacturing, and technology-driven businesses. He has had a long tenure with Bosch, culminating in his role as president of Bosch Oceania, where he led complex, multi-sector operations spanning manufacturing, industrial technologies, mobility solutions and consumer products.

In addition to his executive career, Gavin Smith has served on multiple public and private company boards, providing governance oversight and strategic guidance to engineering-led and industrial organisations operating in competitive global markets.

ANCA co-director Pat Boland said the appointment comes at a pivotal time for the company as it continues to execute its growth and diversification strategy amid changing global market conditions: "Gavin brings a strong strategic lens to the role, underpinned by deep global experience in engineering and manufacturing. His long tenure at Bosch, combined with his board experience, gives him a deep understanding of how to balance strategy, operational discipline and long-term value creation. This will be critical as ANCA continues to invest in technology and quality, while ensuring we deliver the best possible solutions for our customers.

"As market conditions continue to evolve, it is increasingly important that we remain smart and strategic in how we invest, diversify and execute. Gavin will bring new ideas to the board that will help deliver sustainable, long-term growth."

Under Gavin Smith's chairmanship, the ANCA Board will place strong emphasis on operational excellence and disciplined strategic execution, reinforcing the company's focus on engineering leadership and sustainable performance. ANCA's strategy is centred on supporting customer profitability through the production of the highest quality tools at the lowest total cost per tool. This is achieved through advanced engineering, vertically integrated technology, automation and disciplined innovation focused on consistency, efficiency and long-term value for customers.

Gavin Smith succeeds Graeme Billings, who is stepping down after serving as chairman. Pat Boland thanked Graeme Billings for his leadership and contribution to ANCA during his tenure.

"Graeme has made a valuable contribution to ANCA and we thank him for his leadership and service," Pat Boland said.

ANCA Group remains committed to delivering world-class engineering and manufacturing solutions, supporting customers globally through innovation, performance and long-term partnership.

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Hard gear skiving with PCBN tools:
A new route for high-quality internal gears

The shift from combustion engines to hybrid and electric drivetrains is changing the requirements placed on transmission manufacturing. Electric drives need compact gearboxes with high power density, high efficiency and low noise emissions. These demands are especially important because electric motors no longer mask gearbox noise as combustion engines once did. At the same time, batteries add weight and cost, so designers look for lighter, more compact transmission concepts that use fewer raw materials while still reliably transmitting high torque. Hard gear skiving with Polycrystalline Cubic Boron Nitride (PCBN) tools offers a practical new manufacturing route to meet these demands.

One response to these requirements is the increasing use of planetary gearboxes. They offer high transmission ratios in a compact space and are therefore well-suited to electric and hybrid drive units. However, planetary gearboxes also require high-accuracy internal gears and stepped planetary gears. In the past, internal gears of moderate quality were sufficient for many automotive applications. Today, electric vehicle drivetrains increasingly require internal gears with significantly better flank accuracy, lower waviness and much finer surfaces. These features are essential for reducing noise, improving efficiency and increasing load-carrying capacity.

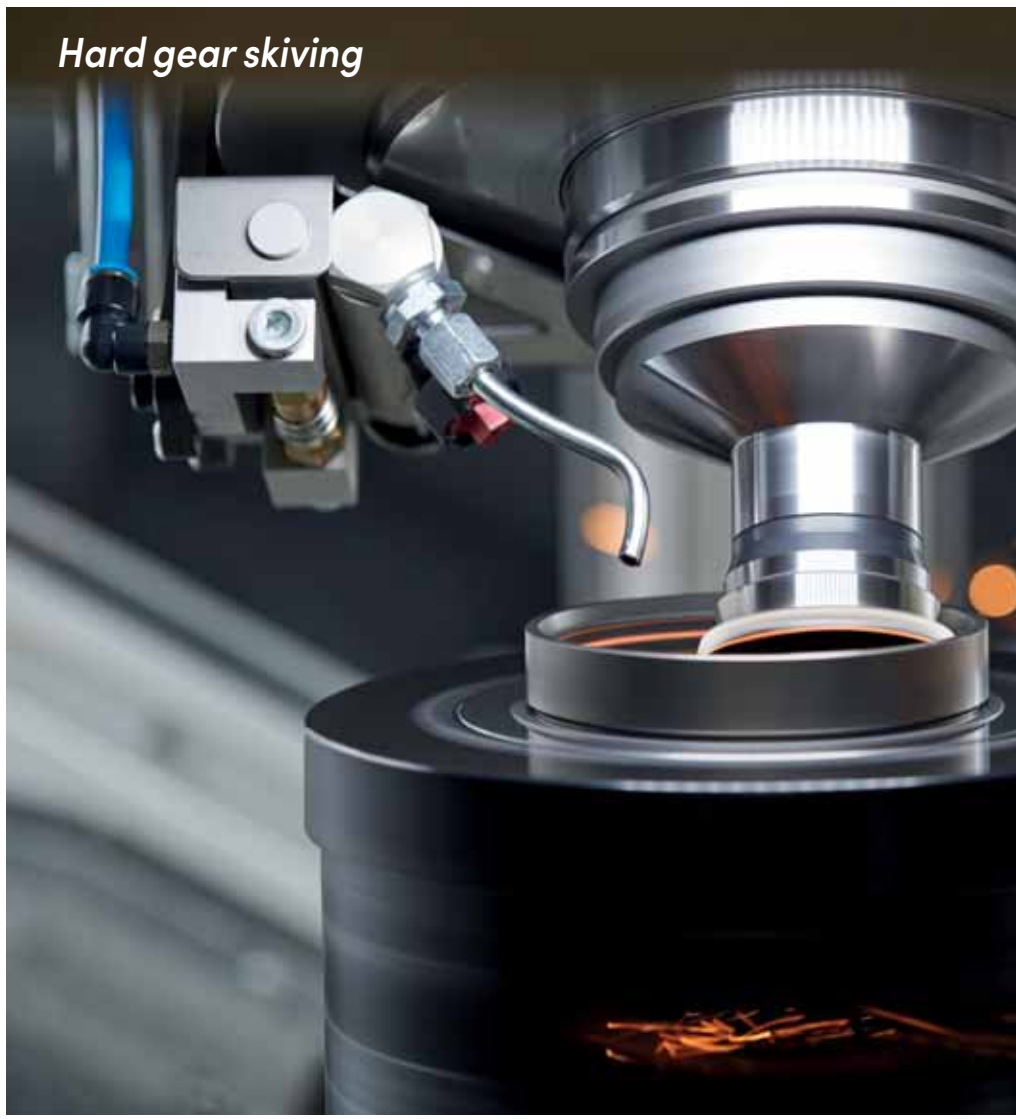
This creates a manufacturing challenge. Internal gears are difficult to hard-finish economically, especially when they are thin-walled and martensitic hardened. Martensitic hardening maximises load carrying capacity, but it also causes distortion. Thin ring-shaped gears often become oval and the tooth flanks wobble back and forth after hardening. A hard-finishing process must therefore remove material accurately without simply following the distorted shape. It must also cope with strongly varying stock allowance around the circumference.

Existing process chains involve compromises. Nitriding causes less distortion than martensitic hardening, but it requires more expensive materials, long treatment times and soft machining at relatively high material strength. This raises tool wear and machining cost, since nitrided steels are harder to cut than case-hardening steels before heat treatment. Case hardening is more economical and gives high load capacity, but it produces larger and less predictable distortion. Without subsequent hard finishing, the resulting gear quality usually is inadequate for demanding electric drivetrain applications.

External gears are commonly hard finished by continuous generating grinding, but this process is generally not suitable for internal gears. In external grinding of stepped pinions, the grinding worm's geometry also causes collisions with the smaller gear. For internal gears, gear honing and internal generating grinding can be used in some cases, but they face limits in productivity, tool life, surface quality, robustness and process cost. These limits become more severe when the workpieces are thin-walled and distorted after hardening.

Hard gear skiving offers a promising alternative. Gear skiving is a continuous cutting process with a geometrically defined cutting edge. It has become well established in the soft machining of internal gears. The process's key advantage is the combination of productivity and flexibility. Unlike grinding or honing, the cutting edges have a defined geometry and the process can be adjusted kinematically to correct the gear geometry. This makes it attractive for hard finishing distorted internal gears.

Earlier attempts at hard gear skiving relied mainly on carbide tools. These tools could produce excellent quality, but the tool life was


Hard gear skiving

often too short for economical large-scale production. Typical tool life with carbide has been in the range of tens to a few hundred parts per tool regrind, depending on the component and process. For high-volume automotive manufacturing, this limits the process's economic appeal.

The technology described here is based on PCBN. PCBN is well known from hard turning. It combines high hardness, thermal resistance and wear resistance. For hard gear skiving, however, the challenge is not only the cutting material itself. The tool must withstand an interrupted cutting process, fluctuating chip thickness, changing cutting angles and a varying stock allowance due to hardening distortion.

The PCBN tool system uses carefully selected substrate properties, including grain size, CBN content, and binder system. The tool edge microgeometry is also adapted locally along the cutting profile. In some areas, the edge must be sharp enough to produce a fine surface. In others, it must be stronger to resist chipping. This tailored microgeometry is one of the central features of the technology described here. It allows the tool to balance edge stability, surface finish and tool life.

The tool is only one part of the solution. Hard gear skiving places high demands on the machine. The process must precisely synchronise the tool and workpiece via an electronic gearbox. Any relative displacement between the tool and the gear can lead to form errors. The machine must also resist the force fluctuations that arise when distorted parts present different stock allowances around the circumference.

To meet these demands, the process was developed in conjunction with a dedicated hard-skiving machine. The RS 300 is a vertical six-axis machine designed specifically for hard gear skiving internal and external gears up to 300 mm in diameter and modules up to 3 mm. It has a rigid 14-ton structure, closed-loop axis control, gantry drives, and a high-stiffness tool interface. Its dynamic behavior is tuned to the characteristic excitation frequencies of hard gear skiving, including tooth-meshing frequencies and harmonic effects caused by oval workpieces.

A key feature is that the machine adapts its spindle control parameters to the actual tool holder and clamping setup. This is important because different tools and fixtures change the inertia of the rotary axes. Generic control settings would reduce dynamic performance. By characterising the system during setup, the machine can operate close to its optimal dynamic range while maintaining stability.

Accurate positioning is also essential. The machine uses a laser device to measure the tool geometry after tool changes. A relearning induction sensor determines the workpiece position and compensates for disturbances such as thermal drift. These functions help maintain proper alignment between the tool teeth and the workpiece gaps throughout mass production.

The process is designed for dry machining. This is significant because it eliminates coolant-related effects and allows chips to carry heat away from the cutting zone. It also has environmental and logistical benefits. Dry chips can be recycled more easily and the process avoids the energy, maintenance and disposal costs associated with cutting fluids.

Digital support is another important part of this technology. Gear skiving has complex cutting conditions. Chip thickness, clearance angle, rake angle, tool load, collision risk and surface topography all vary during the process. Three-dimensional process simulation is therefore used to design the macro process and refine the cutting strategy. Parameters such as axis-crossing angle, eccentricity, tool-tooth number, roughing and finishing strokes, cutting speeds, feeds and edge microgeometry can be optimised before production starts.

The ARGUS monitoring system adds process transparency. It can monitor the machine and the cutting process, correlate input-part variation with finished gear quality and detect influences such as hardness variation. In a high-speed cutting process that is otherwise difficult to observe directly, this makes hidden process effects visible and controllable.

The practical results are significant. In one application involving an internal gear for a battery-electric vehicle, the process achieved surface roughness below Ra 0.1 µm and Rz below 0.6 µm in the range typically associated with polish grinding. The gear quality was ISO class 5 or better, and gear runout was reduced from roughly 120 µm after hardening to below 20 µm after hard skiving.

In a second industrial tool-life test on an internal gear for a plug-in hybrid vehicle, the process time was 36 seconds per part. Average tool life reached 2,700 parts per resharpening while maintaining overall ISO class 5 gear quality. The profile form is ISO 4 and the flank form is ISO Class 2. The PCBN tool could be resharpened and reused and because it does not require coating, which avoids the variability associated with decoating and recoating. The reported tool cost was approximately $1.50 per workpiece.

PCBN hard gear skiving closes an important gap in internal gear manufacturing. It combines the strength advantages of martensitic hardened gears with a hard-finishing process capable of high quality, low surface roughness, long tool life and competitive cost. For electric and hybrid drivetrains, where compact design, high efficiency, low noise and scalable production are essential, this technology offers a practical new manufacturing route.

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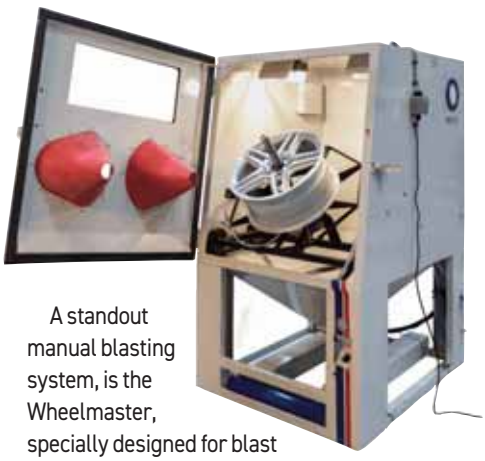
Driving precision in the automotive industry

With an established history in not only manufacturing premium blast and ultrasonic equipment for renowned customers within the automotive industry, but also a proud historic and ongoing presence within British motorsports, Guyson understand that safety, quality and meticulous attention to detail is not optional, its fundamental.

Guyson's blasting capabilities: Accelerated throughput, repeatable quality

Guyson manufacture a wide range of manual, automated and robotically controlled blasting technology, highly suitable for use across the automotive industry.



A standout manual blasting system, is the Wheelmaster, specially designed for blast etching alloy wheels. Built with specific handling features to enable operators to safely load and unload each wheel, the manual bead blasting machine helps operators to produce an even finish with easy sweeps across the wheel surface. Unlike traditional disc sanders, the Wheelmaster allows both easy penetration of the blast media stream between the spokes as well as very precise localised etching.

For more complex geometries, as well as larger components and production scales, Guyson's automated and robotically controlled blasting technology delivers real-time customisation, multi-axis coverage, pin-point control of process parameters and flexible component or blast gun manipulation.

Some examples include Guyson's Multiblast RSB - Rotary Spindle & Table Blast Systems, which have been used for shot peening con rods. These cutting-edge machines are built with flexibility for either fixed or transversing guns, horizontal or vertical inverter-controlled options and a spindle or turntable fixture, to suit almost any shot blasting or peening process. The Multiblast RXS900 - Rotary Indexing Blast Systems engineered to allow continuous, selective or overall surface treatment of individual components, produced in volume, have been utilised by the automotive industry for removing feather burrs left on blade tips of turbocharger wheels.

The Guyson Sandblaster Special returns

Last month, the Guyson Sandblaster Special officially made its long-awaited return to hill climbing action at the British Hillclimb Championship event at Harewood, Yorkshire. The Sandblaster Special holds an important place in hill climb history, having been driven to championship victories in 1969 and 1971 by its original designer and builder, David Hepworth. Behind the wheel for this season will be Tim Thomson, son of Guyson International's managing director (1953-1991) and Jonathan Flesher.

Originally constructed using a 1960s Brabham Formula One car, the Sandblaster Special was extensively modified to meet the demands of hill climb competition. One of the most significant adaptations was the addition of a four-wheel drive transfer case, greatly enhancing performance on hill climb courses. Further modifications included the installation of a powerful Chevrolet V8 engine, a custom-designed gearbox and the distinctive yellow "Sandblaster Special" livery.

Guyson's Ultrasonic Cleaning technology: Shifting gears in automotive precision cleaning

From manual small baths to large, automated multi-stage cleaning lines, Guyson produces a variety of ultrasonic cleaning equipment best suited to the needs and requirements of the automotive industry.

Guyson's manual KS Tanks, microprocessor-controlled for precise results and UCR Ultrasonic Cleaning Tanks, designed to deliver an ultrasonic clean and rinse process, are utilised for removing oils and greases, as well as providing outstanding ultrasonic cleaning results for brake, clutch and gear assembly components.

Guyson's four-stage Microsolve Co-Solvent System, which seamlessly integrates ultrasonic cleaning, ultrasonic rinsing, vapour rinsing and freeboard drying is the go-to choice for heavy contamination removal. Guyson's Microsolve Co-Solvent utilises a combination of HFE or HFO and petroleum distillate-based solvating agent to enhance cleaning operations for more complex requirements. Notably, this highly efficient system has been implemented for the precision cleaning of aluminium and titanium engine and gearbox components.

To discover in greater detail how Guyson's innovative blasting and ultrasonic cleaning solutions can transform your automotive processes, contact the Guyson team today.

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Midland Deburr & Finish well positioned at the sharp end of £4.6bn UK automotive opportunity

As the UK automotive sector sets its sights on a £4.6 billion supply chain opportunity, manufacturers across the Midlands are being called upon to deliver not just volume, but precision, consistency and compliance at scale. For Midland Deburr & Finish Ltd in Lye, that shift is already well underway.

New analysis from the Society of Motor Manufacturers and Traders (SMMT) highlights an 80 percent increase in demand for UK-sourced automotive components by 2030, driven largely by electrification, localisation strategies and geopolitical pressures. While much of the headline growth centres on batteries, electric motors and power electronics, the reality for manufacturers on the ground is that every component, whether part of a battery casing or a chassis assembly, must meet ever tighter finishing and cleanliness standards.

Chris Arrowsmith, managing director of Midland Deburr & Finish, believes this is where a critical, often overlooked capability comes into play: "Everyone talks about batteries, motors and electronics, but none of those components leave the factory without going through a finishing process," he explains. "Deburring is fundamental. If you're increasing output by 80 percent, you also need to guarantee that every edge is safe, every surface is clean and every part is consistent. That's not optional, it's audited."

Finishing moves from background to bottleneck

As OEMs and Tier 1 suppliers accelerate localisation efforts, the pressure is cascading down the supply chain. Pressings, machined parts, castings and fabricated assemblies, all highlighted by SMMT as core growth areas, require high-quality deburring and degreasing before they can move to coating, assembly or final installation.

For EV platforms in particular, tolerances are tightening. Components such as battery enclosures, cooling systems and electronic housings demand clean edges and contaminant-free surfaces to ensure performance and safety.

"Surface preparation is becoming a gating factor," explains Chris Arrowsmith. "You can invest millions in machining or forming, but if parts arrive with burrs, sharp edges or residual oils, they simply won't pass downstream processes like coating or assembly. That's where specialist providers like us come in."

Vibratory deburring scales with demand

At its Lye facility, Midland Deburr & Finish has seen sustained growth in demand for vibratory deburring and metal degreasing, particularly from automotive suppliers looking to scale production without compromising quality.

The company's investment in a wide range of vibratory bowls, media and compounds allows it to process everything from small precision components to larger pressings, handling materials including ferrous and non-ferrous metals, as well as plastics.

"Automation is key," Chris Arrowsmith notes. "You can't meet EV-driven volumes with manual finishing. Vibratory processes give you repeatability, scalability and the ability to handle batch sizes from one-offs to thousands of parts, all with consistent results."

Supporting the shift to electrification

The SMMT's "Opportunity Auto" campaign underscores the UK's ambition to remain a global automotive leader, with production targets of 1.3 million vehicles annually by 2035. With demand for electric drive systems expected to surge by more than 350 percent and battery-related manufacturing set to triple, the supporting supply chain must evolve rapidly.

Midland Deburr & Finish sees its role as enabling that transition, not just through capacity, but through process reliability. "Electric vehicles bring new materials, new geometries and new expectations," says Chris Arrowsmith. "Deburring isn't just about removing sharp edges anymore, it's about ensuring component integrity, preventing fatigue, improving coating adhesion and ultimately supporting the performance of the final vehicle."

A local capability for a global market

With government-backed initiatives such as DRIVE35 and continued private investment from major OEMs, the UK's automotive supply chain is entering a critical phase of growth and transformation. For regional specialists, the opportunity lies in delivering the high-quality, value-added processes that underpin advanced manufacturing.

"Reshoring only works if the capability is here," Chris Arrowsmith concludes. "The UK has the engineering expertise, but finishing has to be part of that conversation. If we get that right, this £4.6 billion opportunity is absolutely achievable."

As the industry moves forward, it is increasingly clear that success will not be defined solely by what is made, but by how well it is finished.

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UK partnership delivers advanced grinding solution to European carbide specialist

RK International Machine Tools has supplied a new JAINNHER JHC-18S NC1 single-axis centreless grinding machine to a leading European carbide tooling supplier, in a project that showcases a powerful partnership between two established UK companies.

The machine, part of the renowned JHC Series from Taiwanese manufacturer JAINNHER, was configured for precision through-feed grinding of carbide blanks. This application demands exceptional wear resistance and surface finish, achieved through a high-performance diamond grinding wheel manufactured in the UK.

The precision grinding wheel was manufactured by DK Holdings Ltd, a Kent-based manufacturer of precision diamond tooling located in Staplehurst. With a history dating back to 1959, DK Holdings is renowned for designing and manufacturing precision diamond and CBN profile wheels for challenging materials such as tungsten carbide, ceramics and hardened steels. This bespoke tooling solution is critical in enabling the end user to achieve the tight tolerances and consistent, repeatable results required in carbide tooling production.

The project highlights the strength of the long-standing relationship between the machine supplier and the tooling manufacturer. John Emptage, sales director at DK Holdings, comments on the synergy between the two companies: "RK International Machine Tools and DK Holdings have enjoyed a long partnership over the years and work well together. This project is a great example of mutual support, with RK supplying the precision platform and DK supplying the advanced tooling and abrasives to ensure the customer gets an optimised and completely bespoke grinding solution."

"The JHC-18S is a well-regarded model in the JAINNHER range, known for its rigidity and precision, making it ideal for both infeed and through-feed operations. The NC1 single-axis configuration provides precise control over the X-axis infeed, allowing for automatic compensation of wheel wear to maintain consistent tolerances and reduce downtime, a crucial feature for high-volume production runs," says Simon Rood, general manager at RK International.

This delivery to a European carbide tooling supplier underscores the capabilities of UK companies and what a strong partnership can achieve. By combining RK International's expertise in machine tool supply with DK Holdings' leadership in super abrasive technology, global manufacturers can access high-precision grinding solutions tailored to the most demanding applications.

New JAINNHER JHC-18S NC1 centreless grinding machine from RK International Machine Tools Ltd with a diamond centreless grinding wheel manufactured by D.K. Holdings.

About RK International

Since being established in 1951 RK International Machine Tools Ltd, a privately owned company, spanning three generations, has been involved in the supply of quality new and used machine tools. Clients requiring individual machines such as lathes or milling machines, or major industrial turnkey packages, are serviced in exactly the same professional manner.

From initial quotation to final commissioning, all functions including demonstration, time studies, delivery, offloading and final positioning; training and, if required, after sales services are operated in house and are not dependent on subcontractors. Clients can be confident in dealing with a single source machine tool supplier. The company specialises in used lathes, used milling machines and of course its extensive range of new and used universal grinding machinery.

About DK Holdings

Based in ISO-certified facilities in Kent, UK, DK Holdings Limited delivers precision diamond tooling solutions engineered to meet exacting customer requirements.

With more than 65 years of proven expertise and a commitment to innovation, it manufactures tools that excel in quality, accuracy and long-term durability.

Serving both domestic and international markets, its skilled team of sales and technical engineers supports a wide range of industries, including aerospace, automotive, defence, medical device manufacturing, renewable energy and general engineering.

Its tools are engineered for performance in demanding applications, working with materials such as FRP/GRP composites, optical glass, processed stone and other hard-to-machine substrates.

In addition to the extensive standard product range, DK Holdings provides fully custom-engineered solutions designed for specialist machining environments.

Whether you're facing a complex grinding challenge or require consistent high-precision CNC results, DK Holdings are trusted by industry leaders to deliver tooling that performs.

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Grinding solutions from Rollomatic

Powerful production tool

Rollomatic has set an ambitious task with its GrindSmart®630RW3 machine, equipped with the brand-new Smart Stacker. This model is a high-precision 6-axis grinding machine featuring a FANUC robot, offering exceptional flexibility. With its innovative kinematics, it is perfectly designed to handle a wide variety of applications.

Smart Stacker challenge

The Smart Stacker, an advanced automation solution, takes production autonomy to an unprecedented level in the industry. To highlight its capabilities, Rollomatic launched the Smart Stacker challenge: producing 2'250 end-mills fully unattended. These tools are divided into various shank diameters and geometries and have been completed autonomously after the initial setup for all cutters by incorporating features offered in the "Road to Automation" program.

Laser machining technology

Rollomatic laser technology opens a world of infinite possibilities to achieve complex geometries, offering unrivaled precision and outstanding efficiency. Particularly, the solutions for producing micro tools, of various materials, utilising 3D machining and femto-second technology, while achieving complex geometries and the most exacting criteria in terms of precision and machined surface quality. Rollomatic provides high performance laser machining solutions; controlling all stages of the process, from setup and programming, to simulation, with exceptional production performance and very high quality and precision results.

Complete tool grinding solution

Equipped with innovative 6-axis kinematics, the GrindSmart®660XW machine has been specially developed to perform all grinding operations required for the manufacture of rotary cutting tools with diameters ranging from 0.1 to 12.7 mm in a single machine and with a single clamping. Its exceptional precision makes it ideal to produce microtools. The machine features four linear and two rotary axes. The unique aspect is the workhead, mounted on a CNC linear axis. With this feature, the tool grinding and the well-known Rollomatic peel grinding process, are combined together into a single machine model. The benefit of the traveling workhead for peel grinding operations is that the grinding wheel is always on top of the steady rest while the workhead axis is pushing the tool through the grinding wheel, providing excellent process stability.

Adaptive grinding solutions

This versatile 5-axis CNC grinding machine is tailored for the high-quality production and resharpening of cutting tools up to 150 mm in diameter. The NUMROTO® programming software ensures user-friendly and intuitive programming and offers an array of endless possibilities. Set up times are reduced to their minimum thanks to the unmatched ergonomic design. A compact footprint with generous travels allows for efficient use of floor space in the workshop. The Strausak® ONE machine can be equipped with a new chain loader with 155 positions, ideal for regrinding and new tool production.

The ideal solution for producing inserts

The 6-axis precision tool grinder GrindSmart®630XW has been designed for high performance and specialty tool manufacturing for both long and short batches. It is equipped with linear motors, combined with torque motors on the rotary axes, providing even more benefits such as enhanced surface finish and reduced maintenance costs. The GrindSmart 630XW, with its unique 6 axis kinematic design, enables manufacturers to grind every operation including the periphery, chip breakers and any additional features in a single clamping. This capability delivers exceptional precision and efficiency across a wide range of insert geometries, making the GrindSmart 630XW the ideal solution for high performance replaceable insert production.

New SINA laser marking cell

ERT Solutions, Rollomatic's partner for the integration of custom robotic systems, presents the new SINA automatic laser marking cell, which has been specifically designed to meet the productivity, traceability and quality control requirements of cutting tool manufacturers. Featuring exceptional autonomy, it combines performance and innovation to ensure precise tool identification.

Available with an automatic door option and a large 43-inch screen, the SINA cell offers an intuitive interface and optimal ease of use. In addition to being fully customisable, its design allows for the marking of a wide range of tool sizes and other applications, while maintaining a small footprint which is ideal for optimising production space.

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How Domin manufactures revolutionary valves with the micrometre precision of the S33

British high-tech company Domin is revolutionising entire industries with 3D-printed, highly efficient hydraulic components, relying on the process-reliable precision of the STUDER S33 universal cylindrical grinding machine

At the Domin Technology Centre (DTC) outside Bristol in England, the smell of innovation is in the air. The atmosphere is characterised by concentrated energy, because this is where the future of motion control is being shaped. The bright, tidy halls are home to state-of-the-art 3D printing systems, EDM and milling machines and, most recently, a S33 cylindrical grinding machine from STUDER. These are tools for young, talented professionals who are united by a common mission: to wake an entire industry from its technological slumber. With its 85 highly qualified employees, Domin is one of the most innovative companies in the UK.

Hydraulics is the technology that uses pressurised fluids to precisely control force and movement even with the heaviest loads with seemingly effortless ease. Hydraulics systems have become an indispensable part of our modern world, whether in excavators moving tons on construction sites, in aircraft for the extension of their landing gear, or in cars executing braking commands in fractions of a second. It is also true that, compared to other indus-tries, there has been relatively little innovation and progress in this field since the 1950s.

High-tech valves and pumps are advancing hydraulics

"Traditional hydraulics are incredibly powerful, but also notoriously inefficient. Conventional systems can waste up to 70 percent of their input energy," explains Cameron Adams, manufacturing engineering manager at Domin. He and his team have therefore made it their mission to take this key technology for virtually every modern industry into the next era, so that more can be achieved with less. Domin aims to achieve this with its core products: extremely responsive servo valves and ultra-compact high-performance pumps.

The company is leveraging the design freedom of metal 3D printing to manufacture novel components with complex, flow-optimised internal structures. Such complex channel structures would be unthinkable with conventional subtractive manufacturing. The result is digitally controllable hydraulic systems that enable efficiency gains of up to 90 percent over conventional solutions. For example, a single modern valve from Domin reduces costs by around $400 per year, which leads to significant savings in large systems. Domin's customers are found in industries such as aerospace, automotive and motorsports, industrial manufacturing, robotics, shipping and energy.

Scalable production thanks to the STUDER S33

Domin manufactures its products from extremely hard, durable and corrosion proof/resistant maraging steel using 3D metal printing. The additive process is followed by post-processing of the surfaces and fine geometries, known as edge matching. This involves aligning the control edges of the valve slide with the windows of the valve housing with an accuracy of a few micrometres. This alignment is crucial for the overall performance of the valve.

Until now, Domin has performed edge matching using wire erosion (EDM). This is a process that delivers high accuracy but is comparatively slow. "We were faced with the problem of scaling an extremely precise but slow process for our growing production," recalls Cameron Adams. To do this, Domin needed a machine that would reliably guarantee the highest precision and also offer the flexibility to combine different machining operations. After an intensive evaluation, the choice fell on the S33 CNC universal cylindrical grinding machine from STUDER.

High expectations for precision exceeded

Domin now uses the S33 for high-precision grinding of the diameters and fine control edges of valve spools for key products such as the S4 Pro, S6 Pro and S10 Pro series valves. The accuracy requirements for this are extremely high. For example, the S6 Pro valve requires a diameter tolerance of just three micrometres, 0.000,12 inch, a value that is twenty times smaller than the diameter of a human hair. "The precision and reliability of the STUDER machine exceeded our expectations. During the acceptance test, the deviation across 50 components was only 0.0006 mm, 0.000,024 inch, thanks to in-process measurement and no, that's not a typo," states Cameron Adams.

This is made possible by state-of-the-art grinding technologies and high-quality components with which the Swiss quality manufacturer, with over 113 years of tradition, equips its cylindrical grinding machines. The

Looking to the future, Domin is clearly focused on growth. Production volume is set to increase exponentially in the coming years. To cope with this, the next step has already been decided: automating part loading is the next milestone on the road to highly efficient series production.

This is another reason why the S33 with its smart and future-proof automation options was chosen. Cameron Adams concludes: "With STUDER, we have a partner at our side who will accompany us through these development steps and help us realise our vision of a fully automated, intelligent manufacturing process.

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S33 features the revolutionary C.O.R.E. hardware and software architecture, whose large touch display not only ensures intuitive operation but also smart visualisation of relevant production data. And with features such as frequency controlled motor grinding spindles for external and internal grinding, as well as a machine bed made of Granitan® S103 mineral cast for the necessary thermal stability and vibration damp-ing, reliable, precise results are achieved.

Overall, the S33 has enabled Domin to raise its production to a higher level. Thanks to the extremely low tolerances, the hydraulics specialists can now produce their valve spools and blocks as fully interchangeable components in series production. The manual pairing of components that was previously necessary is no longer required. For Domin, the decisive techno-logical advantage of the S33 was its configuration with two grinding wheels. "The ability to grind both the diameters and the shoulders of the spools in a single machine is a game changer for us," says Cameron Adams.

Domin and STUDER also enjoy a trusting working relationship. "Communication between our specialists and the excellent engineers at Domin worked very well right from the start. Together, we were able to identify the S33 as the optimal machine and configure it for the specific production requirements," recalls Michael Läuffer, area sales manager UK/Ireland and Benelux at STUDER.

Automated processes to combat skill shortage

What should be done when a high order intake leads to production bottlenecks? For gear pump manufacturer Maag, the answer was obvious. When purchasing a KELLENBERGER K1000 cylindrical grinding machine in 2023, the company opted for an automation solution by Kellenberger, which is precisely tailored to the workpiece and workflow, including a pallet changer and robotic arm.

Maag is a leader in the manufacture of all types of gear pumps for the polymer, chemical, petrochemical, pharmaceutical and food industries and delivers to nearly every country in the world. Since its founding in 1913, the company has secured a top position in the industry through extensive expertise, know-how and dozens of patents. Each year, more than 2,000 pumps of various sizes leave the plant in Oberglatt near Zurich.

An extremely strong order situation in 2022 created an exceptional challenge for the company in effectively managing the workload. At the time, most of the machines in the production fleet were either over- or under-dimensioned for the wide range of workpiece sizes. This often resulted in long waiting and processing times.

Thomas Lutz, head of the cylindrical parts department and with the company for 32 years, recalls: "We were working in three shifts, doing overtime even on weekends to meet delivery deadlines and even outsourced some of the machining." For production manager Kristian Osrecak, who has been with Maag for 25 years, it quickly became clear that the high costs of outsourcing and the administrative effort involved in coordinating schedules with suppliers were not sustainable long-term solutions. The acquisition of a grinding machine that precisely matched the workpieces, combined with a custom-tailored automation system, was intended to put an end to that.

"We were actually quite well equipped in terms of our grinding capabilities," Kristian Osrecak explains. "Here at our Oberglatt plant, we had grinding machines from three well-known manufacturers at the time. At our Maag Italy competence centre in Rozzano, where our industrial pumps are produced, we were already using two Kellenberger machines, one U1000 and one KELLENBERGER K100. Now we had to determine which of these grinding machine manufacturers could offer the right automated solution for our needs. When acquiring new machines, it's standard for us to request quotes from at least three suppliers. If the specifications are the same, price becomes the deciding factor. However, one of the Swiss machine builders we contacted didn't submit a quote at all."

Convincing concept for machine and automation

"The most convincing concept in terms of machine and automation ultimately came from Kellenberger," says Thomas Lutz. "What also impressed us was the clean and structured execution of the project and the professionalism shown by the Kellenberger representative responsible for us, Daniele Corso."

The automation solution offered, featuring a pallet changer and robot, is one of many options in the Kellenberger portfolio, which is designed to offer a suitable automation solution for every machine and machining requirement. To achieve this, Kellenberger collaborates with the most capable automation specialists in Europe. And if the wide range of standardised solutions should ever fall short, custom solutions are developed.

Highest precision easily automated

The KELLENBERGER K1000 features hydrostatic guideways on all main axes, ensuring maximum form accuracy for grinding tasks involving interpolating axes. The CNC-controlled B-axis for the grinding head is also hydrostatic, meaning it is free from wear. It is equipped with a direct drive, a water-cooled high-torque motor and an angular encoder with a resolution of 0.1 arcseconds. This allows the

turret grinding head to swivel approximately three times faster and position with an accuracy of less than one arcsecond. Especially in applications requiring the swiveling of different grinding wheels, this significantly reduces idle times and boosts productivity.

The KELLENBERGER K1000 is optionally available with centre distances of 1,000/1,600 mm and centre heights of 200, 250, or 300 mm. Of the more than 30 different grinding head configurations with external and internal grinding spindles available as standard, covering virtually every machining requirement, Maag selected a configuration with two external grinding spindles and one high-frequency internal grinding spindle with a maximum speed of 42,000 rpm.

"The machine and automation were tailored to our wishes and specifications," explains Thomas Lutz. "Our workpieces have specific machining requirements due to the high precision demanded. For example, we needed two measuring probes to monitor the runout of the rear face and the diameters of the bores during machining. Additionally, we required a 3-jaw chuck on the robot to ensure secure clamping of the parts. The many options offered by the KELLENBERGER K1000 leave virtually nothing to be desired."

Quick and easy programming with the control software BLUE Solution

Like all Kellenberger machines, the KELLENBERGER K1000 is equipped with the innovative BLUE Solution control software specially developed by Kellenberger for sanding, which is easy and logical to use for all operators, even inexperienced ones. The operating elements are clearly arranged on the touchscreen and can be quickly identified and selected. The user receives maximum support when entering data. A plausibility monitor indicates incorrect entries, allowing the operator to make adjustments.

The clearly structured interface, divided into the three main areas: Setup, Programming and Production and the three secondary areas: Diagnostics, Settings and Functions makes setting up the machine for a new production process easier than ever. The BLUE Solution software includes modules for non-circular and thread grinding, as well as a regrinding cycle. For more complex grinding tasks like thread grinding, the BlackCam version is used.

The KELLENBERGER K1000 is running around the clock in three shifts. Two employees take turns operating the machine and the third shift runs unattended. "As hoped, the automated KELLENBERGER K1000 has drastically increased our productivity. The backlog and the many overtime hours are finally a thing of the past," Thomas Lutz and Kristian Osrecak agree.

Kellenberger grinding machines are exclusively available from DF Precision Machinery in Lutterworth, the sole agent for all Kellenberger branded grinding products in the UK & Ireland. ***https://dfpmach.com*** or ***sales@dfpmach.com***

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Specialists in sheet metal finishing machines

Sparx Machine Tools is a family-run business located in Poole, Dorset. With extensive experience in the machine tool industry, Sparx was founded to deliver superior-quality machine tools and exceptional customer service. As a family business, it understands the importance of treating every customer with the same high level of service, regardless of their budget or needs.

It is a proud member of the European Association of Machine Tool Dealers and are committed to providing professional service and expert advice to all of its customers. Visitors are welcome to inspect its machinery, view demonstrations, or discuss available options.

The company is one of the UK's leading suppliers of metal finishing machinery, working with renowned brands like Kuhlmeyer and NS Máquinas.

Sparx is proud to be the exclusive UK distributor for NS Máquinas, offering state-of-the-art machinery designed for optimal performance. Equipped with advanced built-in software, these machines allow for remote diagnostics, enabling the Sparx team to identify and address potential issues quickly, often without the need for an on-site visit.

In addition to this cutting-edge support, Sparx provides comprehensive consultation services, ensuring that you receive expert advice to choose the best solution tailored to your specific operational needs and goals.

As well as offering new machinery, it also provides a high-quality selection of used equipment, meticulously serviced and prepared by expert in-house engineers. This ensures every machine meets the highest standards before reaching our customers.

Fully trained and experienced engineers are also available to assist with any service or repair needs, delivering reliable support whenever you require it. Sparx Machine Tools serves customers across the UK and offers repair and maintenance services for all types of machinery and parts. Additionally, it provides valuations for surplus equipment, followed by prompt payment and professional collection.

Why choose Sparx Machine Tools

From sourcing the best value machine tools to providing expert installation and training, Sparx Machine Tools is dedicated to supporting your business. It offers comprehensive installation and training to help you maximise the value of your investment and its repair and maintenance services are designed to ensure you achieve the best possible return on your purchased machinery.

Owner Michael Trotter states: "Sparx Machine Tools has only been in business for five years and we have grown every single year. We will continue to grow as we push the NS Máquinas brand and Kuhlmeyer brand."

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Turbine blade manufacturing challenges in 2026

Turbine blade manufacturing remains one of the most technically demanding areas within aerospace and power generation manufacturing. Increasing demands for efficiency, tighter tolerances and improved surface quality continue to push aerospace firms to higher levels of quality. Modern turbine blades are manufactured from hard materials and feature increasingly complex geometries, creating major challenges throughout the production process.

AGS has been involved in this sector for many years but at MACH 2026, showcased several new technologies specifically designed to address these manufacturing challenges. This comes at a time where there is huge growth in aerospace, defence and power generation, and with the UK as one of the leading markets in these industries.

The growing challenge of turbine blade clamping

One of the biggest difficulties in turbine blade production is achieving secure, stable and repeatable clamping without distorting the component. With the thin walls, complex shapes, and susceptibility to vibration, this creates difficulties in milling and grinding. As such, traditional workholding systems can no longer keep up with the process stability standards demanded by modern manufacturing.

DiaClamp: Advanced clamping for turbine blade machining and grinding

The DiaClamp revolutionises turbine blade clamping. Originally developed by CERN scientists for the fabrication of magnets used by the Large Hadron Collider, the innovation generated significant interest at MACH due to its ability to improve rigidity, stability, and repeatability during machining.

This system is specifically designed for turbine blade milling, griding, and eroding and offers several key advantages:

- Improved component stability
- Reduced vibration during machining
- Enhanced accessibility for grinding and milling
- Significantly faster setup and changeover times
- Improved repeatability between components
- Reduced risk of distortion

The unique patents from DiaClamp provide the ability to improve process stability while reducing setup times brings huge cost savings to manufacturers. It is a must have for any turbine blade manufacturer with large volumes or high value components.

Surface finishing challenges in turbine blade production

As we see across many sectors, surface quality requirements for turbine blades continue to become more demanding, particularly within aerospace applications where aerodynamic performance and reliability have to be maximised.

Polishing has become an important part of the production process where milling or grinding does not produce the finish required. For the highest quality turbine blades, this means achieving an extremely fine finish, consistent edge quality, free of micro burrs, and all while ensuring each part has its geometry preserved and has consistency across batches.

Traditional manual finishing methods can be labour intensive, inconsistent and difficult to control, while also slightly altering geometries.

DLyte dry electropolishing technology

DLyte dry electropolishing technology attracted major interest on the AGS stand at MACH 2026. The patented process developed by GPAINNOVA polishes components through ion transport using tiny solid spheres. When an electrical current is passed through the sand-like media, the spheres interact with the peaks of roughness of the workpiece, creating an ion exchange process. This removes ions from the surface of the component and transfers them into the media particles, resulting in a highly controlled and uniform polishing effect that is clean and does not alter part geometry.

The technology offers several important advantages for turbine blade applications:

- Consistent processes
- Improved repeatability
- No operator skill required
- Ability to process complex geometries
- Enhanced surface quality, below 0.2 microns
- Cleaner and more environmentally-friendly processing

For turbine blade manufacturers, DLyte technology turns one of the most difficult areas of production into a consistent, repeatable, low skill process; one that not only improves the efficiency and reliability of polishing, but also that of the blade once it is in operation.

Conclusion

The strong level of interest shown at MACH 2026 demonstrated the growing industry focus beyond the grinding or milling machine itself, with manufacturers increasingly seeking complete process solutions. Advanced Grinding Solutions is proud to bring unique and innovative technologies to UK manufacturers, creating new opportunities for customers to improve productivity, quality, and process capability.

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Fives unveils the Landis TTG 3000

A new grinding platform combining flexibility, precision and process integration

Fives has introduced the Landis TTG 3000 Twin Turret Grinder, a new technology platform engineered to meet the growing challenge of achieving uncompromising precision while maintaining flexibility in modern manufacturing.

Developed by combining Fives' global expertise from the UK and USA, the Landis TTG 3000 brings multiple grinding processes into a single machine, delivering the stability, control and adaptability required in today's production environments.

As production demands continue to evolve across industries such as bearings, aerospace, medical, optics, and energy, components are more complex, tolerances are tighter and batch sizes are increasingly variable.

Traditional grinding methods, reliant on multiple machines and repeated re-clamping, introduce variability and inefficiency. The Landis TTG 3000 addresses these challenges by reducing process steps while maintaining consistent, micron-level accuracy.

TWIN TURRET architecture for integrated grinding

At the core of the TTG 3000 is its patented twin-turret architecture, enabling true multi-surface machining within a single setup. One turret carries the grinding wheel, while the opposing turret supports the workpiece, providing access to complex geometries without repositioning.

This configuration reduces cumulative error, improves process control and enables efficient transitions between components, materials, and batch sizes.

A platform for future-ready manufacturing

Equipped with advanced control and digital capabilities, the TTG 3000 supports multi-axis coordination, process simulation and integration into automated and Industry 4.0 environments.

By simplifying production and improving process reliability, it enables manufacturers to increase productivity while maintaining full control over quality and performance.

The Landis TTG machine is a three-part solution to issues faced in the modern manufacturing process: flexible processing, flexible machine, flexible layouts. This machine allows for a highly flexible process in which multiple operations may be combined into one machining platform while maintaining or improving the accuracy and precision of a traditional single spindle machine.

The Landis TTG is a twin-turret, multi-spindle solution to grind ODs, IDs, faces, tapers, concentric and eccentric diameters to sub-micron tolerances in a single clamping

Key features include:

- High flexibility in workpiece grinding operations
- Constant wheel surface speed
- Various spindle configurations available
- Superior surface finishes
- Hard turning and polishing capabilities
- Easy automation integration
- Reduced work piece changeover time
- High performance control with open architecture

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How Mirka is shaping the future of abrasives

Abrasives, along with tools, are integral to the production process. But like all equipment, they must evolve with the times to meet the needs and requirements of the user as well as the production process being employed, now and in the future.

In this article Chris Brook, business sector manager of transport and industry for Mirka (UK) Ltd, explains how Mirka is achieving this.

The first is through the provision of abrasives to workshops that have a longer lifespan than traditional abrasives. An example of this is the Abranet® ACE range, which has been designed to be a hardwearing, time efficient abrasive. This means a more consistent and fast cutting solution over a sustained period, this consistency translates to several benefits for the business in the form of lower material usage and less labour time per job, which increases efficiency and fewer finishing defects that can lead to costly reworks or the scrapping of the item, which leads to margins becoming slimmer.

The second is the economics of abrasives and what Mirka and its team on the ground are seeing is businesses, no matter their size, focusing on moving from 'cheaper' abrasives to premium options. This move is made after considerable due diligence, but it takes them away from the slippery slope that is 'buy cheap buy twice'. While cheaper options may initially save money, this short-term saving is quickly wiped out when the user has to purchase the same product again very quickly down the line. In comparison, premium products are built to last and will provide the same end product or service, whether they are being used for the first time or the hundredth time.

Another area that businesses are focusing on is sustainability. This view is not just coming from the angle of abrasives but also looking at the sustainability credentials of the abrasive supplier. Sustainability is a key pillar for Mirka. This is highlighted by the fact that the business has invested in a state-of-the-art circular grain manufacturing plant, in Jeppo, Finland, which is scheduled to open this year.

In addition, we are continuing to move manufacturing processes to less energy-intensive options to ensure they are as environmentally friendly as possible. These credentials are just as important as the abrasives because sustainability could be a box that needs to be ticked before they are purchased and used in the workshop.

We also know that abrasives need versatility due to the multitude of surfaces that come through workshops or that are being developed for products. We feel that the way we ensure our abrasives stay ahead of the game is through constant communication with companies, whether they are manufacturing specific surface materials or producing the products that hit the shelves. The information we receive from them is constant and it is sent across to the R&D team in Finland, which helps them understand the needs and requirements of the sector and aids in the development of abrasives that are assets to businesses. In addition to the R&D team, our experienced technical experts work closely with customers to optimise the abrasives they are using in their processes. What we have seen from this close working relationship is that by helping them select the right abrasive for the job at hand, measurable savings are made that can be invested back into the business.

Ultimately, the role of abrasives extends far beyond simply preparing or finishing a surface, and this is because businesses are now demanding products that deliver consistency, efficiency, sustainability and long-term value, while also adapting to the evolving requirements of production processes. By investing in durable premium abrasives, sustainable manufacturing initiatives and close collaboration with customers, Mirka is positioning itself to meet both the current and future needs of the industry.

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Master Abrasives success at MACH 2026

Showcasing the broadest selection of grinding and finishing solutions in its 50+ year history, Master Abrasives experienced high level of activity at this year's MACH exhibition.

Taking pride of place on the stand were three key machines offered to the industry by Master Abrasives through its carefully selected machinery partners. Alongside the machinery, the Master®, Winterthur Technology Group and Molemab range of grinding wheels was featured.

Ian Meredith, Master Abrasives' applications engineering manager, comments: "MACH provided once again the perfect platform to present the full spectrum of machinery and grinding solutions we now supply. We were delighted to welcome hundreds of visitors to our stand, where they explored machines ranging from Micromatic Grinding Technologies' PLUTO 18 Cylindrical CNC Grinder to Supfina's latest Supfina One precision superfinishing system, as well as Top-Work's M-40 Universal Cutter & Tool Grinder."

The PLUTO 18 Cylindrical CNC Grinder offers a compact yet powerful solution for the precise grinding of shaft-type components. Suitable for both plunge and traverse grinding, it combines high accuracy with straightforward operation via an intuitive user interface. Offered in both straight and angular versions, the PLUTO 18 ensures dependable performance and strong value.

Master Abrasives also introduced machinery from Top-Work Industrial Co. Ltd for the first time, following the appointment as its official UK and Ireland agent in January 2025. Established in 1986, Taiwanese Top-Work specialises in manufacturing tool grinding equipment. Master Abrasives showcased at MACH Top-work's M-40 Universal Cutter & Tool Grinder, a durable and versatile machine designed for precise tool sharpening and refurbishment.

Also present on the stand was the brand new Supfina One, a smart and compact solution for precision superfinishing using either stone or tape. Designed with flexibility in mind, it is particularly well suited to small and medium batch production, delivering consistent, high-quality results without the expense or complexity associated with larger systems.

Paul Batson, managing director at Master Abrasives, adds: "I am extremely pleased with the outcome of this year's MACH exhibition. Compared to MACH 2024, we saw over a 70 percent increase in the number of discussions at the stand, along with several highly productive meetings with both new and existing customers. Securing the sale of the PLUTO 18 to Boneham & Turner was undoubtedly a standout achievement for the team."

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Expertise in abrasive solutions

TSH Engineering Services Ltd brings more than 36 years of specialist expertise to the abrasives industry, supporting manufacturers across the UK with high performance abrasive solutions and technical guidance. Their deep understanding of abrasive processes enables them to help OEMs and SMEs optimise productivity, improve component quality and reduce operational costs across a wide range of applications.

They provide comprehensive support for precision grinding and dressing processes, including creep feed and VIPER grinding, crankshaft and camshaft grinding, cylindrical, centreless, gear, flute, roll and surface grinding, as well as honing, lapping, polishing, deburring and blending. The company's experience spans both conventional and advanced manufacturing environments, ensuring that each customer receives a solution tailored to their exact process requirements.

Their technical expertise is trusted across multiple industries, including aerospace, gas turbine, automotive, toolroom, oil & gas, bearing manufacturing, cutting tools, gear production, medical implants and marine engineering. The company has delivered proven process improvements for major engine manufacturers, enhancing crankshaft and camshaft grinding and polishing operations and the machining of Inconel hot section components for turbine blades, vanes and shrouds in aerospace and power generation applications.

Beyond precision operations for metals, they also support manufacturers working with composite materials, glass, advanced materials, fabrication and sheet metal processes and woodworking. Their knowledge of cutting, grinding, deburring and blending across ferrous and non ferrous materials allows TSH Engineering Services to optimise abrasive selection for both performance and cost efficiency.

Whether you require a vitrified CBN wheel for a high precision grinding operation, diamond electroplated tools for composites and advanced materials, cutting and grinding discs for fabrication, or sanding belts, discs and sheets for joinery, they provide the right products backed by technical insight.

TSH Engineering Services Ltd partners with leading global manufacturers to supply a full portfolio of superabrasive and conventional abrasive products. Their offering includes diamond and CBN solutions, as well as aluminium oxide, including sintered and silicon carbide products, ensuring they can meet the demands of any grinding or finishing application.

With access to an extensive range of abrasive products, machines and ancillary tools, they deliver solutions that enhance efficiency, quality, cost control and reliability; the core performance pillars that matter most to modern manufacturing.

The company also offers guidance on coolant application for precision grinding, ensuring correct delivery and flow to protect components from thermal damage and extend grinding wheel life.

At TSH Engineering Services Ltd, their goal is simple: to guide you toward the best possible abrasive solution for your application, helping you achieve consistent, high quality results across every process.

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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**

Costs per copy: £71.00 with free delivery

ADGRIND
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The book is now on stock in the UK at:
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Revolutionising stainless steel fabrication

The impact of the right wheels - By Doris Vrečko, product manager, Weiler Abrasives

Stainless steel is a material synonymous with durability, corrosion resistance and sleek aesthetics. It is the backbone of industries ranging from shipbuilding and heavy equipment fabrication to medical device manufacturing and architectural design.

However, working with stainless steel isn't without its challenges. That's where choosing the right wheels comes into play, helping transform the way users cut, grind and finish this resilient material.

Abrasives designed for stainless steel

The basic styles of abrasive products used to clean, finish, cut and grind stainless steel are the same as those used on carbon steel. But there are several differences in the makeup of these products that make their use easier and more productive.

For instance, cutting and grinding wheels that are labelled as contaminant-free or INOX boast a special formulation containing additives to ensure that they contain less than 0.1 percent of certain elements, such as iron, sulfur and chlorine. This formulation preserves the stainless steel's corrosion-resistant properties, which are crucial for applications requiring pristine surface integrity. Bonded abrasive products labeled as INOX are contaminant-free. Whether or not a contaminant-free product is needed depends on the final requirements of the application. It's also important to avoid using a product on stainless steel after it's been used on carbon steel.

Coated abrasives designed for stainless steel typically feature an extra coating layer, or "topcoat," that helps reduce heat buildup during the grinding and finishing processes, wire brushes have stainless steel wires that do the cleaning.

It's important to understand how stainless steel responds to finishing and why it's so critical to use products specifically designed for this material. Doing so can save time and money while helping users achieve the desired results.

Cutting stainless steel: Precision and efficiency

Cutting stainless steel to the desired size and shape is the first critical step in fabrication. Cutting this material efficiently is crucial to maintain productivity and quality across many industries.

Look for wheel options that are designed specifically to tackle this task with precision, offering fast cut rates, reduced downtime and extended product life, which helps ensure cost effectiveness and fewer replacements. Certain wheels, like Metalynx INOX 2.0 wheels from Weiler Abrasives, are engineered to minimise heat buildup to prevent the dreaded discoloration and maintain the integrity of the stainless steel. These wheels also feature a new blotter design that includes an industry-first Optimum Use Line. This line is a visual indicator that helps the user utilise the wheel to its full life to reduce wheel changeovers and help improve productivity while also reducing waste and abrasive spend.

Best practices for cutting stainless steel include using thinner wheels, such as the increasingly popular 1-millimetre options. Thinner wheels minimise heat and material waste, ensuring a clean cut every time. It's also critical to avoid cross-contamination and always use tools dedicated to stainless steel to prevent compromising the material's anti-corrosive properties.

Grinding stainless steel: Speed and precision

Following the initial cut, grinding stainless steel smooths out rough edges and surfaces, which is crucial for achieving precise dimensions and preparing the material for further finishing.

Bonded grinding wheels are ideal for removing large amounts of material quickly. Their advanced bond formulation prevents uneven edge wear and chipping, enhancing both safety and longevity. The Metalynx 2.0 wheels from Weiler are designed with fiberglass cutback from the edge for aggressive

grinding right out of the box. They also feature a QR code on each wheel so users can conveniently access crucial safety information where and when they need it.

Flap discs are another abrasives option for grinding stainless steel. These discs combine grinding and finishing in a single step, eliminating the need for frequent product changeovers. This dual functionality saves time and money, making flap discs particularly valuable for less experienced users. Look for flap discs designed with different flap configurations for higher material removal rates, a smoother feeling and longer product life.

Finishing stainless steel: Achieving the perfect finish

Finishing stainless steel to meet specific aesthetic and functional requirements is a meticulous process and a multistep journey. No one product does it all when it comes to finishing stainless steel. For example, it is common to start with a bonded abrasive for heavy stock removal, move to a flap disc to blend and then use a resin-fibre disc to blend the parent material to the weld before finally ending with a polishing or buffing disc.

It's essential to start with the right abrasive

based on the required finish, be it a non-directional, No. 4 finish or a mirror polish. Skipping steps in this process may save time initially, but it often leads to costly rework. Look for wheels that have an additional coating layer, which can help reduce heat buildup. This helps achieve a smoother finish and reduces the need for rework.

Cleaning stainless steel: Maintaining surface integrity

Cleaning stainless steel surfaces and welds is essential to maintaining the integrity and appearance of the material.

Wire brushes equipped with stainless steel wires effectively remove contaminants without damaging the base material. Look for a brush designed to minimise premature wire failure to ensure durability and longevity. Brushes that deliver consistent results contribute to overall operational efficiency.

Choosing products to maximise results with stainless steel

New products designed specifically for stainless steel can help improve productivity and finish quality when working with the material and can be game-changers in stainless steel fabrication. These products address the unique challenges posed by stainless steel and offer solutions that enhance efficiency, safety and quality across cutting, grinding and finishing applications. They can also help users achieve the best possible results with minimal effort and maximum safety.

In addition to choosing a product designed for the specific application and the required finish, it's also important to follow the steps of the finishing process and understand how stainless steel reacts. This will help reduce rework, save time and money and get the best results with stainless steel.

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3M expands 3M Xtract Cubitron II Film Disc 775L range with new fine grades

3M has introduced the expansion of its Xtract™ Cubitron™ II Film Disc 775L product line, now available in fine grades up to 1000. This innovation marks a significant advancement in sanding technology, offering users new levels of productivity, potential cost savings and improved work environments

The 3M Xtract™ Cubitron™ II Film Disc 775L is suitable for use on all metals, composites, wood, paints, primers and other coatings. Photo: 3M.

Originally launched in 2014 as its first sanding disc containing Precision-Shaped Grain (PSG), the 775L range exemplifies 3M's commitment to innovation and excellence. The new grades, ranging from 500+ to 1000+, feature precision-shaped grains that are smaller than the width of a human hair. In addition to developing the fine grade shaped grains, 3M has also optimised grain distribution and orientation on the disc. This ensures that each grain works harder, helping to deliver up to 2x more speed[1] and 6x more life[2] without compromising the finish quality.

"At 3M, we are dedicated to pushing the boundaries of what's possible with our science-driven innovations," says Annabel Parker, global portfolio manager at 3M. "The expanded 775L range demonstrates our commitment to providing solutions that enhance productivity, improve safety and help reduce costs for our customers in more applications, such as scuffing, topcoat preparation, coating refinement and rework."

By delivering faster cutting and longer-lasting abrasives, the 775L range reduces the need for frequent disc changeovers, leading to significant potential cost savings and reduced downtime. Users of ultra-fine grade discs will experience new levels of productivity improvements and reduced rework, thanks to the consistent finish provided by PSG.

3M Precision Shaped Grain technology provides fast cut and long life without compromising finish - now available from grades 80+ to 1000+. Photo: 3M.

The advanced PSG technology in the 775L range, when paired with the Xtract clean sanding hole pattern, not only boosts productivity but also delivers significant health and safety benefits - it is designed for clean sanding through optimised dust extraction, offers up to 32 percent less vibration[3] and up to 20 percent less noise[3]. These features enhance workplace safety and cleanliness, benefiting operators' health and safety, improving workshop conditions, and reducing rework.

3M's commitment to innovation is evident in the continuous development of its products. The introduction of smaller PSG grains and the expansion of the 775L range are just the latest examples of how 3M applies science to help improve lives and solve global industry challenges.

For more information about the 3M Xtract Cubitron II Film Disc 775L visit: *www.3m.co.uk/3M/en_GB/p/d/b40065039/*

[1] Cuts up to twice as fast: Compared to 3M Aluminum Oxide Abrasive Products. Results are based on total cut over four x ninety second cycles on an automated test with maple material using 5 inch (127 mm) 80 grit discs and 3M Xtract™ Low Profile Finishing Back-up Pad 20290. End of life is defined as when the 3M disc cut rate drops to 75 percent of the initial cut rate of the conventional abrasive disc.

[2] Lasts up to six times as long: Compared to 3M Aluminum Oxide Abrasive Products. Results are based total cut over twenty-four x ninety second cycles on an automated test with maple material using 5 inch (127 mm) 180 grit discs and 3M Xtract™ Low Profile Finishing Back-up Pad 20290.

[3] Up to 32 percent less vibration/Up to percent less noise: Compared to competitive Ceramic and Aluminum Oxide Abrasive Products, according to independent testing by Fraunhofer Institute, October 2021. Keeping all system components equal and only changing the sanding disc used.

Cubitron 3 Flap Discs from 3M are helping transform manufacturing efficiencies

As the abrasive industry contends with a skilled labour shortage and a highly competitive

The 3M Cubitron 3 Flap Disc 1169F is ideal for beveling, deburring, weld seam grinding and working on edges and contours. Photo: 3M.

market, abrasive solutions that improve throughput and efficiency are critical. To help tackle those challenges, 3M has introduced the 3M Cubitron 3 Flap Disc 1169F, a cutting-edge advancement in abrasive technology.

The 1169F Flap Disc is designed to enhance productivity and operator comfort across a variety of applications. This premium, versatile 3M disc can help deliver high cut rates, consistent wear, long life, high material removal. It's also easy to use, conformable to prevent gouging and results in finer finishes reducing downstream processing time.

The 1169F Flap Disc is constructed with a polyester backing and our re-engineered 3M Precision-Shaped Grain to provide a smoother operator experience and reduce hand-arm vibration compared to grinding wheels. 1169F Flap Discs are available in both flat (T27) and conical (T29) shapes in grades 40+, 60+ and 80+ to address a wide variety of abrasive applications.

The new 3M Cubitron 3 Flap Disc 1169F delivers high material removal, long service life, and versatile performance – thanks to its redesigned precision-shaped abrasive grain. Photo: 3M.

This innovative product is ideal for medium to high-pressure applications such as weld removal, deburring, blending, finishing, refining, grinding and surface preparation on metals like carbon steel and stainless steel.

The 1169F Flap Discs offer up to 82 percent more material removed on carbon steel compared to a leading competitive alumina zirconia flap disc, and 69 percent more material removed on carbon steel compared to a leading competitive ceramic flap disc, reducing abrasive costs and increasing productivity. Its extended lifespan helps minimize the need for frequent disc changes, while its consistent high-quality grinding reduces re-work.

For more information about the 1169F Flap Disc from 3M, visit: **www.3M.com/Cubitron3**

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Complete range of polishing and lapping machines from LAM PLAN

More than just honing and polishing equipment, LAM PLAN machines are modular honing and polishing solutions. The extensive range of machines and accessories makes them extremely efficient and versatile production tools.

M.M.9400

Polishing and lapping machine for variable production of small parts: Ø 5 to 130 mm
For this new version of the best-selling M.M.8400, LAM PLAN has tried to retain the essence of this table-top trimmer/polisher by making a number of fundamental improvements:

- Plate Ø381 mm (Ø 400 mm optional)
- Plate rotation speed from 20 to 120 rpm
- Inner ring Ø140 mm
- Weight 75 kg

The M.M.9400 is a solution for integrating a means of finishing flat surfaces into your workshop at a contained price. The machine's compact dimensions and ergonomic controls are still there, but it has become more rigid and even more versatile.

It can be fitted with a wide range of accessories to adapt your equipment to your needs. Integrated control of LAM PLAN feeders, recipe memory and motorised drive are just some of the possibilities.

Versatility

The M.M.9400 can be fitted with cast iron, DIALAM®, NEW LAM® M'M' or FAS® platens, enabling you to achieve all types of surface finish defined in your specifications, e.g. honing, thickness adjustment, honing and polishing. It is also perfectly suited to your maintenance needs on all sealing parts, lapping of flaps, safety valves or small mechanical seals.

New configuration and improvements

- More rigid welded tubular steel chassis, stainless steel tank
- Ergonomically improved controls (better visibility of screen in working position)
- 4.3" touch screen
- Programme import/export on USB key
- Multiple attachment points for accessories, such as dosing devices, jib, etc.
- Memory for 30 recipes
- Mobile water inlet controlled by solenoid valve
- Improved connectivity, ability to control three dispensers, remote maintenance facility

M.M.9610

Lapping/polishing machine for moderate production of parts : Ø 5 to 210 mm
The M.M.9610 is a very competitive machine, suitable for maintenance work as well as occasional or moderate production. It incorporates the technical choices of the M.M.9400. The M.M.9610 incorporates the technical choices of the M.M.9400.

The machine will enable you to achieve all your objectives in terms of geometry and surface finish with an interesting capacity thanks to its 610 mm diameter table. The

M.M.9610 is compatible with all lapping and polishing supports as well as with the LAM PLAN range of dispensing units.

The M.M.96100 is a solution for integrating a means of finishing flat surfaces into your workshop at a contained price. The machine's compact dimensions and ergonomic controls are still there, but it has become more rigid and even more versatile.

It can be fitted with a wide range of accessories to adapt your equipment to your needs. Integrated control of LAM PLAN feeders, recipe memory and motorised drive are just some of the possibilities.

M.M.9380

Particularly well-suited to maintenance workshops, workshops producing small parts and finishing parts for fine watchmaking. It comes in two versions, version E and version S.

The S version can be fitted with an electronically-controlled jib with three pressure cylinders.

The compact size of these machines makes it easy for the operator to handle all the accessories, such as changing the tray or loading and unloading the rings. M.M.9380 lapping machines are compatible with the AUTOPLAN platen reconditioning system.

The 7-inch touch screen lets you control all the dispensers in the LAM PLAN range and save 45 recipes, each containing five sub-steps. Particularly well-suited to maintenance workshops, workshops producing small parts and finishing parts for fine watchmaking. These compact, first-rate machines can meet the most demanding finishing requirements, as well as intensive production.

About LAM PLAN

LAM PLAN, based at Gaillard, France, has been elaborating and manufacturing products for polishing in the industry. Since 1962, the company has imposed itself as a real specialist in all polishing technologies. It provides 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.

Strengthened by its experience and the requirements it imposed on itself, LAM PLAN markets high-quality, reliable and high-yield products. Among its customers, LAM PLAN is honoured to have 39 of the first 40 French Industry Companies.

LAM PLAN directs all its efforts and research toward the development and manufacture of products anticipating the evolution in health and safety rules for both the respect of user health and the preservation of our environment.

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Automated disassembly of high-voltage batteries

Efficient solutions for sustainable battery recycling and the circular economy

Electric mobility is on the rise and with it the need for efficient solutions for the recycling and reprocessing of high-voltage batteries. Liebherr-Verzahntechnik GmbH has developed LHDismantle, an industrial-grade system for the automated disassembly of high-voltage batteries.

OEMs and recycling companies face a common challenge: Regardless of whether battery components are reconditioned for reuse or sent for recycling, the first necessary step in the process is to dismantle the high-voltage batteries from electric vehicles. However, dismantling them manually is time-consuming, costly and involves safety risks. At the same time, the volume of returns is rising steadily and there is a shortage of qualified personnel capable of handling high-voltage components.

There is another reason why early, smart and automated disassembly is a key component of a functioning battery recycling system: Once the material has been shredded, valuable materials such as copper, nickel, cobalt, manganese and lithium can usually only be recovered through complex metallurgical processes. Leading recycling companies are therefore increasingly relying on precise disassembly processes to achieve high recovery rates and high material quality. This is exactly where LHDismantle comes in.

From research to industrial application

Based on the results of the "ZIRKEL" research project, funded by the BMBF, which investigated the circular economy of battery systems in the electric mobility sector as part of an interdisciplinary consortium, Liebherr-Verzahntechnik GmbH has developed LHDismantle, an innovative disassembly cell for industrial use. The system automates the non-destructive loosening of numerous bolted joints, a safety-critical process that has predominantly been carried out manually until now. The Battery Management System (BMS) can only be deactivated after opening the battery compartment and this creates safety risks due to the exposed high-voltage contacts. LHDismantle automates this stage of the process, reduces the exposure of specialist staff to high-voltage hazards and lays the groundwork for safe, repeatable further processing.

Technical challenges

Automating battery disassembly is a challenging task. Different battery types require a high degree of flexibility, as their geometries, screw types and positions vary considerably. Contamination, corrosion and damage make it difficult to reliably detect the screws, which is particularly challenging for camera-based systems. There is also the high voltage hazard, which imposes the strictest requirements on workplace safety.

Automated unscrewing

At its core, LHDismantle uses a patented, tactile unscrewing method with automatic position correction. This makes the system resistant to dirt, corrosion and damage and ensures maximum process reliability. It also achieves high productivity. An automatic tool change system allows different types of screws to be machined without manual intervention. The removed screws are safely taken away via a swivel unit or an optional extraction module.

System operation is via an intuitive user interface that displays a live graphical status of the entire unscrewing process. Battery types and unscrewing programs are selected directly from an integrated database and new component types can be set up quickly, both in terms of programming and tooling. Using a digital twin, Liebherr-Verzahntechnik GmbH can

digitise new battery variants in advance and simulate and validate the disassembly process before the relevant programs are made available to system users. "When we need to process a previously unknown battery pack, we use reverse engineering to create a virtual twin of the battery pack. From this, we derive the tools and the appropriate disassembly sequence," explains Viktor Bayrhof, product manager for automation systems. This shortens ramp-up times and reduces risks when processing new battery variants.

Integration into the process chain

In addition to unscrewing technology, Liebherr-Verzahntechnik GmbH offers a comprehensive portfolio of solutions for the handling, transport and storage of high-voltage batteries. The LHDismantle cell integrates seamlessly into modular automation systems, serving as a central component within an end-to-end process chain. Pallet Handling Systems (PHS) connect automation cells, machine and manual workstations. In addition, unloading equipment and manual workstations are used for subsequent steps. Third-party components, such as machining centres for milling or laser cutting processes, can also be flexibly integrated. "We always consider the system as part of the overall setup and seamlessly integrate external process steps as needed," says Viktor Bayrhof. This results in a comprehensive, scalable solution for the safe and efficient processing of high-voltage batteries.

Practical testing in real life conditions

The disassembly cell can be viewed at the Liebherr-Verzahntechnik GmbH Tech Centre in Kempten. The company is currently preparing to deploy the system at a test site with the concept based on mutual benefit. Recycling companies gain access to industrial automation technology and can trial it in real life operating conditions.

In turn, Liebherr-Verzahntechnik GmbH gains valuable insights from its practical application and is able to continuously refine the system. "Our solution offers a risk-free introduction to automated disassembly, particularly for companies that have had little experience with automation to date," explains Viktor Bayrhof.

Positioning in a growing market

With LHDismantle, Liebherr-Verzahntechnik GmbH is addressing the growing demand for industrially scalable solutions for battery disassembly. When combined with the corresponding turnkey systems, this creates a comprehensive, integrated solution that adapts flexibly to growing production volumes and supports an efficient circular economy in the field of electric mobility.

About Liebherr-Verzahntechnik GmbH

Liebherr develops and produces high-quality gear cutting machines, gear measuring machines, gear cutting tools and automation systems. The range includes gear hobbing, gear shaping, gear skiving, generating and profile grinding machines as well as chamfering and deburring machines. The measuring devices with software developed in-house stand for ergonomics, user-friendliness, precision, robustness, durability and service-friendliness. Liebherr is also one of the world's leading manufacturers of gear cutting tools and stock tools with long service life. The range of automation systems ranges from linear robots and robot applications to conveying and storage systems through to solutions for pallet handling systems.

About the Liebherr Group

The Liebherr Group is a family-run technology company with a highly diversified product programme. The company is one of the largest construction equipment manufacturers in the world. It also provides high-quality, user-oriented products and services in a wide range of other areas.

The Liebherr Group includes over 150 companies across all continents. In 2025, it employed more than 55,000 staff and achieved combined revenues of over 14 billion Euros. Liebherr was founded by Hans Liebherr in 1949 in the southern German town of Kirchdorf an der Iller. Since then, employees have been pursuing the goal of achieving continuous technological innovation and bringing industry-leading solutions to its customers.

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Nagel develops flexible honing technology for variable batch sizes

At GrindingHub, Nagel Technologies GmbH presented the EcoHone flex, a honing machine specifically designed for the requirements of modern production environments with small to medium batch sizes.

At its core stands a clear message: maximum adaptability combined with high process reliability and economic efficiency. Developed in Germany, the machine extends the EcoHone series with a concept that brings manual, semi-automatic and fully automatic production together in a single system. With this approach, Nagel addresses companies that depend on changing components, short setup times and high precision from prototyping to series production.

Flexibility without compromising precision or process stability

A central feature of the EcoHone flex is its factory-integrated robot interface, which enables a step-by-step transition into automated production concepts, from the standalone machine to the near-autonomous production cell. At the same time, the machine remains fully capable in manual mode and offers maximum freedom in setup and single-part operations.

"Many of our customers face the challenge of producing economically even with fluctuating quantities and frequent variant changes. This is exactly where the EcoHone flex comes in. It combines manual flexibility with an automatable structure and thus creates genuine investment security," explains Sören Pöhlsen, industrial sales engineer at Nagel.

On the technical side, the machine impresses with the proven Nagel in-feed system, which delivers high cut-off accuracy and repeatability. A constant coolant temperature, ensured by an integrated oil cooler, together with a well-designed fixturing concept, supports reproducible honing results at a consistently high level. Different adapter solutions allow the use of both Nagel and third-party tools, a clear advantage for users with heterogeneous tooling environments.

Intelligent process support

A particular highlight is the newly developed honing assistant. It guides the operator step by step through programme creation, reduces setup times and increases process stability, a decisive benefit in environments with frequent component changes. "With the honing assistant, we bring expert know-how directly to the machine. The operator is guided intuitively through the process, sources of error are minimised and the ramp-up of new components is significantly accelerated. This boosts machine availability and lowers unit costs," emphasises Udo Strefler, sales manager at Nagel.

The design too has been built with future readiness in mind: the cabinet-free Beckhoff MX system, integrated lubrication and coolant systems and the ergonomically accessible working area all support easy maintenance and operator comfort. A 16" touch-screen provides clear and user-friendly control.

The user benefit in a nutshell

The EcoHone flex delivers high precision combined with maximum adaptability, reduces setup and programming times and enables a flexible transition into automated production structures without losing sight of economic efficiency. Visitors to GrindingHub had the opportunity to see the solution for themselves and discuss specific application cases and integration possibilities directly with the Nagel experts.

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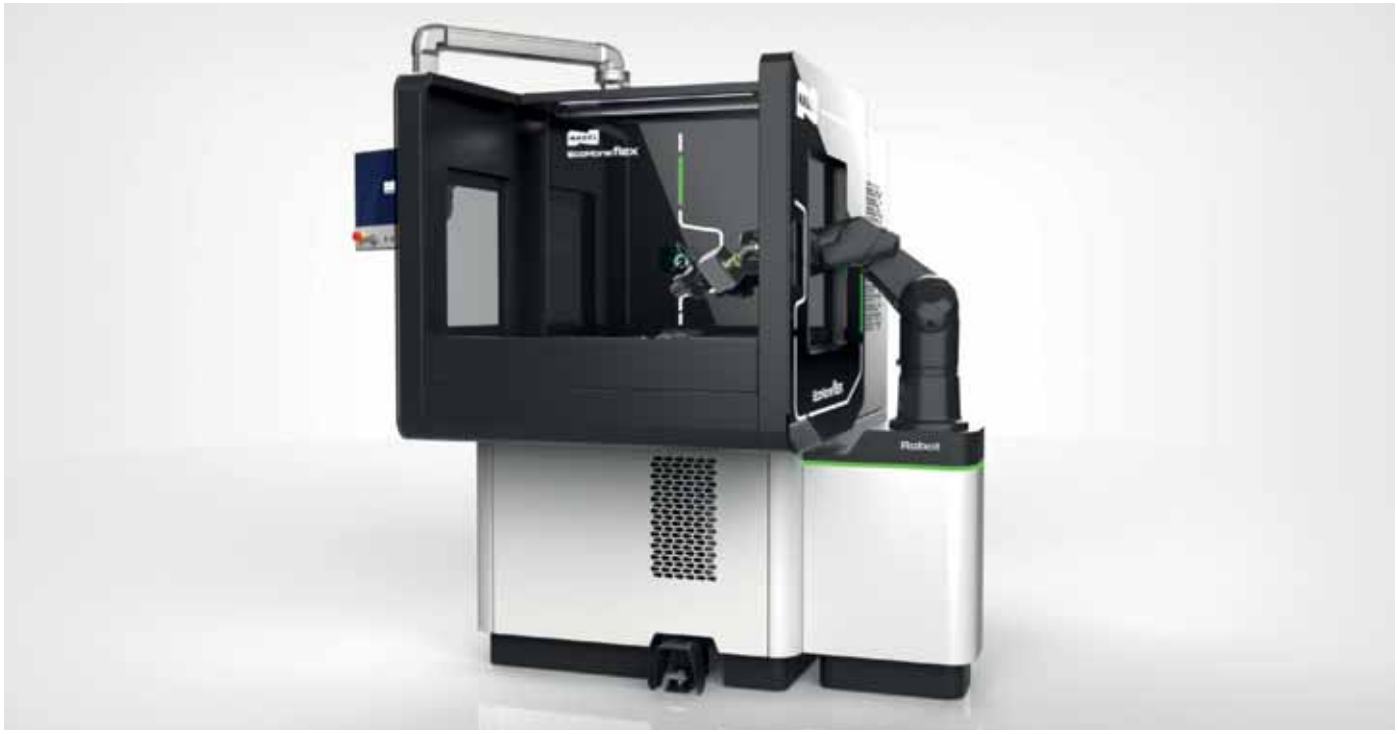

Why should you outsource your honing work to Hone-All?

It's common for companies to use third party accountants, solicitors and IT providers when they don't have teams of experts in-house. However, in recent years, manufacturing companies have realised that they can also benefit from working closely with precision engineering firms to handle parts of their manufacturing process. What advantages could your business gain from using Hone-All's subcontract machining services?

High-quality results

Honing is a key process in the manufacture of parts for a wide range of components. However, it's one that relatively few manufacturing businesses have the plant and expertise to carry out in-house to the required standards. Honing is rarely taught on engineering courses, so it could be difficult for your company to find employees with the appropriate skills to carry out the work and it may be something that is only needed occasionally during production, making it not cost-effective to invest in the relevant machinery and training.

While Hone-All now offers a host of precision engineering services, it began as a specialised

honing company and the process still lies at the heart of its operations. Its engineers are highly trained and the company has invested heavily in research and development, designing its own honing tools and machines over the years.

Lower overheads

Honing machines and tools are expensive and can take up a substantial amount of floor space. They also need to be operated by skilled engineers. Therefore, opting to carry out your honing work in-house could be a costly affair. What's more, you may find that your machinery can't complete all of the tasks that you need it to or that it soon becomes obsolete.

Hone-All has state-of-the-art honing equipment on site which allows it to remove more stock without sacrificing the finish quality. It has also completed bespoke projects for many leading manufacturers in the aerospace, medical equipment and motorsport sectors, so it is experienced in providing cost-effective solutions for complex tasks that standard honing machines are unable to perform.

Increased productivity

Outsourcing your honing work to Hone-All will enable you to streamline your operations effectively and boost your company's productivity.

By choosing to work with a UK-based company, you'll also have peace of mind from knowing that your operations won't be impacted by international shipping delays. This will enable you to reduce lead times, improve customer satisfaction and maximise your profits.

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Sunnen launches machine buy-back program to help manufacturers unlock hidden equipment value

Sunnen Products Company, a leader in high-precision honing, bore sizing and engine rebuilding equipment, highlights its machine buy-back program that gives manufacturers a cost-effective path to upgrade or replace existing equipment while preserving the value of their capital investments. This new initiative provides a solution for shops looking for ways to maintain cutting-edge performance without compromising on long-term value.

Through the machine buy-back program, manufacturers can sell back their current Sunnen machinery or trade it in on a newer model, unlocking the residual value of installed equipment while gaining access to the latest honing solutions. Each machine accepted into the program undergoes thorough inspection and comprehensive servicing, ensuring it is production ready and meets Sunnen's rigorous standards for precision, durability and reliability. The program supports more sustainable operations by extending the useful life of high-quality precision equipment and helping manufacturers maintain peak productivity with proven Sunnen performance.

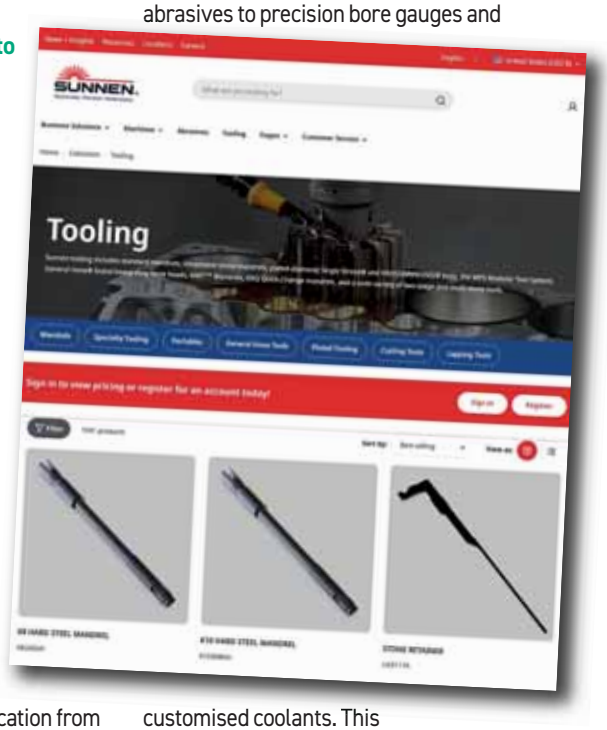
Machines reconditioned through Sunnen's program are integrated into the company's growing portfolio of pre-owned equipment, giving customers access to factory reconditioned honing systems at significantly reduced prices. Every pre-owned machine is backed by a limited warranty, underscoring Sunnen's commitment to customer satisfaction and long-term performance while providing peace of mind on critical production assets. Sunnen's reputation is built on decades of proven results in demanding applications and its equipment is known for unmatched precision, durability and longevity in both horizontal and vertical honing systems.

Sunnen's pre-owned portfolio features a curated range of factory reconditioned honing systems engineered for precise tolerances, quality surface finishes and dependable high-volume performance across diverse applications. By pairing the machine buy-back program with this selection of production-ready, warranty-backed equipment, Sunnen enables manufacturers to improve productivity, reduce acquisition costs and extend the life of their investments with durable honing solutions that stand the test of time.

For more information about Sunnen and its pre-owned inventory, please visit *https://sunnen.com/pages/sunnen-pre-owned*

Enhanced E-commerce platform to enhance customer experience

Sunnen Products Company has enhanced the online experience for customers seeking precision honing equipment and solutions. The website introduces a modern look and intuitive feel, offering easier and more user-friendly navigation for shoppers. Online ordering of Sunnen's consumable products is currently available for customers in the US and Canada. Visitors to the site will benefit from access to all their online orders, including those placed through the previous online ordering platform, ensuring continuity and convenience. Users can create saved lists similar to wish lists and save shopping carts for future use, while the ability to place orders for any saved ship to location from the same account removes the hassle of multiple logins.



In addition to the new online ordering experience, the overall website has been redesigned to help global visitors access the product and application information they need when evaluating Sunnen's portfolio of machines and consumables. Sunnen's updated business solutions tab has been reorganised to help users quickly locate essential company knowledge, complemented by a refreshed resources section where catalogs and brochures are now easier to find.

The platform features improved forms and navigation for accessing global distribution networks, scheduling training, consultations and submitting maintenance requests with streamlined access to customer service.

About Sunnen

Sunnen Products Company, a leader in precision manufacturing for over a century, has established itself as a premier provider in the creation, sizing and finishing of machined surfaces. Headquartered in St. Louis, Missouri, USA, Sunnen is a "total solutions provider," manufacturing everything from machinery and abrasives to precision bore gauges and customised coolants. This comprehensive approach enables Sunnen to deliver turnkey honing solutions that encompass cutting-edge equipment, tooling, consumables and coolants. The company's expertise spans a diverse range of industries, including aerospace, automotive, energy, hydraulics, medical, firearms & defense and tool & die, showcasing its versatility and commitment to innovation. Sunnen's dedication to quality is evident in its products which exemplify the company's focus on high efficiency, precision and advanced technology. With a worldwide presence and a track record of building thousands of honing machines, Sunnen continues to drive innovation in bore sizing and finishing, providing tailored solutions to meet the exacting demands of modern manufacturing across diverse sectors.

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High-end honing technology

The best process for exact bores

Honing is the most precise metal cutting process for the economical high-precision machining of bores. It offers the highest precision in dimension, shape and surface manufacturing tolerances.

KADIA develops high-end honing technology for small to medium-sized bore diameters. With its Smart Dynamic concept, it offers the most advanced procedures for the honing of precision components.

Honing procedure

Honing or long-stroke honing is a machining process with a geometrically undefined cutting edge for the high-precision finishing of bores. The achieved dimensional, geometrical and surface tolerances are less than 1 µm.
Typical characteristics of the honing process:

- Simultaneous overlaying of rotation, oscillation and tool feed
- Surface contact between the abrasives and the bore lining surface
- Surface cross-hatch finish as a result of kinematics
- Coaxial alignment of tool and bore by defined degrees of freedom

Honing procedure at KADIA

KADIA's honing processes are ultra-precise when it comes to fine machining of small to medium-sized bores and this is a worldwide unique feature. Whether for stock removal and target dimension honing, plateau, or match honing, the honing process relies on KADIA's know-how, cutting-edge software and high-tech equipment.

In order to meet the highest quality demands of its customers, it only develops vertical honing processes for directly driven honing spindles with expanding honing tools.

Applications

Finest industrial manufacturing

This honing technology is indispensable wherever there is a need to improve the functional sliding, guiding or sealing properties of contact surfaces in bores.

Typical applications include injection systems, vehicle transmissions, turbo chargers, hydraulic components, ceramic workpieces, small engine blocks, connecting rods, lubrication systems, medical and glass applications, as well as in critical components of the military and aerospace industry.

Smart Dynamic honing technology

Less complexity and more efficiency

High-precision surfaces and tightest shape tolerances, this is a challenge that KADIA are ready to face on a daily basis in its development work. As part of its innovative honing technology, it coordinates the process steps in a precise, reliable and economical manner. The only way for it to achieve a result worthy of the name KADIA is to optimally interlink all parameters involved in the honing procedure.

Less complexity and more efficiency, this is what the company's Smart Dynamic honing technology stands for. The concept is based on two main components: the intelligent HMC100 honing controller and the highly-dynamic LH honing spindles.

HMC100 honing controller

Intelligence meets intuition

The HMC100 model number defines the honing controller of the future. KADIA is setting new standards in the operation of honing machines. In order to reduce complexity and to make honing even easier, the company are continuously developing intelligent software. The advantages of a simple navigation structure are transparency and operating safety.
Top highlights:

- State-of-the-art honing and measuring programs
- User-friendly 19" touch display
- Statistics module for process control
- Latest generation of hardware with SSD drive
- Greatest possible flexibility for future options

LH honing spindles

Dynamic, highly productive, patented

KADIA's patented innovation: the Lean High-speed honing spindles work on the basis of an advanced direct drive technology. Both LH2 and LH3 variants are consistently targeted on dynamics, precision and long service life.
Top highlights:

- Compact and modular design
- Ultra-precise radial spindle runout
- Stroke drive with 5-year warranty
- Internal coolant supply to the tool
- Extremely high material removal rate achievable

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Payback for the hidden costs of dirty coolants

Coolant contamination is one of manufacturing's most persistent and least visible problems. For many workshops, filtration is treated as background maintenance, a necessary but unexciting task that rarely receives management attention. Yet the reality is that dirty coolant quietly drains productivity, drives up operating costs and shortens tool life.

The true cost of coolant contamination can be significant. Studies suggest that poor fluid management contributes to as much as 10-25 percent of all machining-related downtime. Over a year, that can translate to thousands of pounds in lost production, tool replacement and scrap. As Dave Smith, sales director at Eclipse Magnetics, points out: "Filtration isn't just about keeping fluid clean, it's about keeping profits intact."

The hidden losses behind 'Dirty Coolant'

When ferrous particles are left to circulate through pumps, valves and tooling, they act like microscopic abrasives. They dull cutting edges, damage seals and disrupt fluid flow. The effects often appear gradually, tools wear faster, surface finish deteriorates and components require more rework or polishing.

"Every litre of contaminated coolant costs more than people realise, you see it in tool life, you see it in scrap rates and you definitely see it in unplanned downtime when systems clog or sensors fail," says Dave Smith.

Traditional filtration methods, such as paper, bag, or cartridge filters, rely on disposable media. These filters capture larger particles but struggle with fine ferrous debris under five microns. Once blocked, they restrict flow, increase maintenance time and add recurring consumable costs. The result: a cycle of inefficiency and waste.

Turning filtration into a return on investment

Eclipse Magnetics' approach reframes filtration as a value-generating process rather than a cost centre. Its range of magnetic filters, including the Automag and Autofiltrex systems, use high-intensity neodymium magnetic cores to capture virtually all ferrous particles, even those below one micron in size.

Because the process is purely magnetic, there are no barrier elements, pressure drops, or consumables. The systems operate continuously, maintaining consistent flow and performance. When full, the magnetic core is wiped or automatically cleaned and the collected ferrous sludge can be recycled rather than discarded.

Dave Smith explains: "Our customers typically see coolant life extended up to ten times and tool wear reduced by half. That means fewer fluid changeouts, less downtime and a measurable improvement in surface finish. In many cases, the payback is well under six months."

Reducing environmental impact

Sustainability is now a key consideration for many manufacturing operations and filtration plays an often-overlooked role. By extending coolant life and eliminating disposable filter media, magnetic systems reduce both waste and chemical use.

"Every cartridge or paper roll you don't throw away is one less item going to landfill and because the ferrous contamination can be reclaimed, you're turning a waste stream into a recyclable material," continues Dave Smith. "It's a simple change that makes sense both economically and environmentally."

Integration and flexibility

Eclipse Magnetics' filtration range covers flow rates from 150 litres per minute to 10,000 litres per minute, making it suitable for both individual machines and large central systems. It is suited for mechanical processes such as grinding, milling and cutting and units can be retrofitted in-line or off-line without major system modification.

Many plants add magnetic filtration as a pre-filtration stage, removing the bulk of ferrous debris before the coolant reaches barrier filters. This approach significantly extends the life of downstream filters and reduces media consumption. Automated systems, such as the Autofiltrex, are ideal for 24/7 production lines where manual intervention must be minimised.

In many applications, the cumulative savings outweigh the initial system cost in just weeks. After that, the benefits are ongoing, a permanent reduction in running costs and a cleaner, more stable process environment.

Dave Smith concludes: "Once engineers see the data, the argument speaks for itself. Magnetic filtration isn't an optional extra anymore, it's a standard for anyone who wants to run efficiently."

For more information or to explore magnetic filtration, visit: ***www.eclipsemagnetics.com***

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Filtermist announces a new era in oil mist filtration with new range launch


The new AW Series Oil Mist Collectors from Filtermist

The AW Series is designed to offer a compact, easy to use solution for customers with machining applications that use neat oil at high-pressures, as well as high-precision operations. These applications often generate large volumes of sub-micron mist particles, which can be difficult to capture.

The product line has been developed with ease of use at its core; pre-configured setups and single-phase supply mean the units can start extracting as soon as they are switched on.

Built-in LED lights make it easy for operators to monitor the filter's performance and easily accessible filter cassettes make maintenance simple.

"The AW Series is a result of an extensive collaboration with our sister company, Absolent AB," explains René Joppi, managing director of Filtermist.

"We have combined Absolent's top of the market filtration technology with the key proposition our customers around the world value, efficient performance in a compact and lightweight unit, designed to be machine mounted."

The AW Series from Filtermist contains models for different pollution levels, based on three main airflow variants: 250m³/hr, 500m³/hr and 800m³/hr. All variants currently include a final HEPA filter stage.

Units start at just 24 kg and thanks to its patented and proven Catch&Release™ technology, the company can ensure 8,760 hours of continuous, maintenance-free operation. That's the equivalent of one full year of non-stop, 24/7 production.

The AW is made from robust glass-fibre reinforced plastic with an aluminium base. Four inlets mean customers can choose the best connection point for their specific requirements.

"Ensuring the units are as lightweight as possible was also a key priority throughout the development project and offering customers flexibility was vital," continues René Joppi.

"As a result, the AW Series is extremely easy to install, use, monitor and maintain. Using Absolent's filtration technology as its core, we are providing a solution that has proven to be reliable for more than 30 years and the compact nature of the product means it is an affordable alternative to larger, floor-standing extraction units.

"Energy efficiency was also at the top of the agenda during the development of the AW Series. All models in the new range benefit from EC motors with EcoDrive™, which continuously adjusts the airflow to the demands of the process: cutting power consumption and keeping extraction performance stable."

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Proven, not promised: How EMS overcame a competitor bottleneck with Timesavers technology

When investing in high-end surface finishing machinery, manufacturers are often flooded with performance promises. But when Electronic Metalwork Services (EMS) found themselves hitting a critical production bottleneck with a competitor's new deburring and edge rounding machine, they didn't need more promises they needed proof.

Originally founded in 1978 by the current owner's father, EMS quickly carved out a specialised niche in high-precision sheet metal work. Today, the subcontractor's core ethos revolves around manipulating thin gauge material (< 6mm) to exceptionally tight tolerances, delivering flawless, surface-critical products to the demanding telecom, audio and defence sectors.

EMS's strategic goal was to be far more than just a standard laser shop; it aimed to provide true end-to-end manufacturing under a strict "Drawing In, Finished Product Out" philosophy, working across an extensive material portfolio including aluminium, stainless steel, mild steel, copper and brass. However, as the business expanded, production bottlenecks began to emerge. Upgrading the finishing department, specifically for graining and paint preparation for powder coating, became an urgent priority. This led the company to invest in a new deburring system at BlechExpo in 2019.

The cost of broken promises

The initial machine purchased was a competitor's new "Ecoline" model featuring rotary brushes and a "sticky" conveyor belt. While the machine was promised to deliver leading results, its real-world performance was merely "OK" and it quickly failed to meet EMS's high expectations.

The machine's sticky conveyor belt proved to be a major maintenance headache, requiring thorough cleaning up to three times a day just to maintain part adhesion. This repeatedly disrupted production shifts. Worse still, small parts would occasionally lift and be thrown into the air, forcing immediate operational stoppages. While the machine had started out passably, it simply could not repeat its initial quality over prolonged production runs.

Soon, a breaking point arrived when a mechanical fault occurred within the machine's warranty period. Julian Long, Managing Director, reached out to the UK machine agent and the European manufacturer, only to be shocked by a complete lack of support. Left to resolve the issue himself at the expense of valuable production and personal time, Julian Long decided that enough was enough. The combination of non-existent OEM support, crippling maintenance routines, degrading finish quality and an unacceptable buildup of dust and debris on processed parts meant a superior solution had to be found.

Seeing is believing: Partnering with GE Machinery

Julian Long reached out to the team at GE Machinery to explore equivalent options within the globally renowned Timesavers range. The solution was clear: the Timesavers 22 Series WRB configuration, a 600 mm-wide system equipped with a deburring head and four multi-directional rotary brushes.

The machine offered a massive leap forward in usability. Its quick-change abrasive functionality was an immediate asset for a shop frequently switching between different material types. Furthermore, the ability to store custom programs ensured total consistency across recurring batches.

Crucially, the Timesavers system replaced the high-maintenance "sticky" conveyor belt with a powerful rubber vacuum conveyor bed. This didn't just hold small components firmly in place via an aggressive mechanical grip; it actively drew dust and debris away from the work area. Combined with the reassurance that GE Machinery could back the installation with its own dedicated, UK-based service engineers, the transition was highly attractive.

A visit to the Timesavers International showroom sealed the deal. Julian Long witnessed firsthand how the Timesavers Rotary Brush technology effortlessly achieved uniform edge-rounding across complex external profiles while addressing internal apertures and cutouts far better than anything EMS had previously experienced. Julian Long was also able to specify an integrated out-feed handling table to further streamline workflow.

Once installed, the impact on EMS's shop floor was immediate: "We found the finish was vastly superior on the Timesavers machine, the edge-rounding was drastically improved, and it remains perfectly repeatable to this day," Julian Long explains.

The partnership was also validated when a minor issue arose with a roller; rather than facing the radio silence of their previous supplier, GE Machinery and Timesavers resolved the issue rapidly and without hesitation.

Scaling up: The second machine and factory-standard retrofitting

In any growing manufacturing facility, solving one bottleneck inevitably exposes the next. As demand for EMS's high-precision products continued to surge, a new capacity constraint emerged around part brush finishing and graining.

Having experienced the reliability of their first Timesavers unit, Julian Long didn't hesitate to call GE Machinery to order a second machine. However, this time, EMS had a specific engineering request to further optimise its floor

layout. It required a custom, counter-turning cleaning brush to automatically enhance conveyor belt maintenance, alongside an upgraded, larger dust collection system engineered to serve both Timesavers machines simultaneously.

GE Machinery stepped up to the challenge. Utilising a 22 Series machine available in its showroom, GEM's engineering team custom-retrofitted the cleaning brush option to factory standards on-site at EMS upon delivery.

"GE Machinery took care of the entire new configuration," explains Julian Long. "From the layout planning and technical drawings through to arranging the installation, commissioning and the extra engineering work involved, nothing was left to chance. It was fully taken care of, which made the whole pre-installation process completely stress-free."

The on-site deployment was equally seamless. Two of GE Machinery's service engineers worked methodically to commission the twin-machine cell. Julian Long notes that there was: "Absolutely no faff; the guys got it done with the minimum of fuss and nothing was too much trouble when we asked for minor adjustments to work around existing shop floor items."

The business benefits of the new, dual-machine setup have been immediate. Oddly enough, the larger, centralised dust extraction unit operates significantly quieter than the previous standalone system, and dust contamination on finished parts has reduced even further.

When asked what he would say to any fabricator hesitant about making the switch to GE Machinery and Timesavers technology, Julian Long points to a recent real-world inspiration.

"I saw a billboard the other day which I think sums up our entire experience perfectly," he concludes. "It simply said, 'Proven, Not Promised.' That covers everything neatly. GE Machinery and Timesavers have been fantastic."

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Aesculap deburrs bone saws using ultrasound

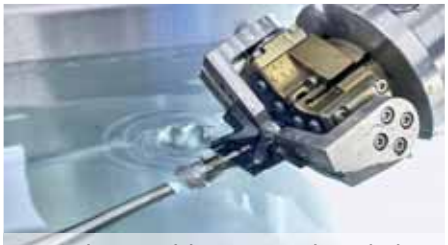
Aesculap AG develops and manufactures medical devices and technologies for surgical procedures. To automate the deburring of its Rapid Action saw blades, the company has opted for a system from the technology specialist ultraTEC innovation GmbH. Available in the UK from VOLLMER UK, the company's deburring technology removes unwanted burrs and fibres from metal components contact-free, using ultrasound.

"Our vision is to protect and improve people's health worldwide," says Manuel Welte, process manager of engineering & processes at Aesculap AG. "To achieve this, we manufacture surgical instruments in a wide range of dimensions, down to the micron scale. We currently have around 28,000 products in our portfolio."

Within micro-production, the company manufactures delicate clamping tools for micro-needles measuring approximately 70 microns in diameter, roughly the thickness of a human hair. Founded in 1867 as a small workshop for surgical instruments, Aesculap is now part of the B. Braun Group. The company, headquartered in Tuttlingen, Baden-Württemberg, has established itself as a leading global manufacturer of medical products and technologies. With around 13,000 employees, Aesculap generates annual revenue of approximately €2.3 billion.

"We consistently pursue technological openness to remain competitive. This was one of the reasons for converting the deburring of our Rapid Action saw blades from manual to automated processing," says Manuel Welte.

"We evaluated and compared various technologies. Ultimately, the ultraTEC system proved to be the most suitable solution for our specific application. ultraTEC's solution-oriented approach, its technical expertise, as well as short distances and regional proximity were additional decisive factors."



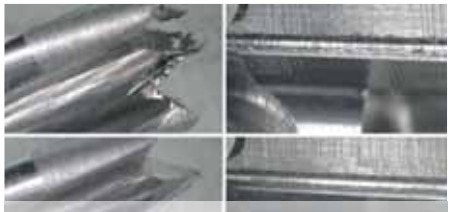
During ultrasonic deburring, an industrial robot guides the components in a defined position.

ultraTEC innovation GmbH, part of the Biberach-based VOLLMER Group, is based in Laupheim in Swabia. To deburr metal components, the company has developed an innovative process that uses ultrasonic energy to remove disruptive burrs and fibres. The technology is used for Rapid Action saw blades, which Aesculap manufactures from high-grade stainless steel.

These single-use saw blades feature a sharp cutting edge for precise, efficient cuts during surgical procedures, including bone or tissue incisions. Each blade is designed for single use and supplied with sterile packaging to ensure product cleanliness and safety. The blades are mounted on the battery-powered Aesculap Acculan motor system, whose titanium housing allows sterilisation with alkaline cleaning media. Rapid Action saw blades are used in operating theatres, outpatient clinics, emergency departments and other medical facilities. They are available in working lengths from 25 to 90 mm and widths from 5 to 30 mm.

"As burrs inevitably occur when grinding the cutting edges of the Aesculap saw blades, post-processing for deburring is essential," says Dieter Münz, managing director of ultraTEC innovation GmbH. "With our A25 S ultrasonic deburring system, this process can be carried out contact-free and automatically during unmanned shifts. The result is a perfectly deburred saw blade that retains its sharp cutting edges."

At present, up to six employees at Aesculap manually deburr the saw blades using nylon brushes, abrasive cleaners and triangular scrapers. In future, the blades will be automatically guided through a process water tank towards a high-frequency ultrasonic sonotrode using the process developed by ultraTEC. Powered by a generator, the sonotrode oscillates 20,000 times per second with an amplitude of 0.1 mm. These vibrations cause the burrs and fibres on the stainless-steel



Before and after - Selective ultrasonic deburring with the ultraTEC A25 S removes unwanted burrs.

With the ultraTEC A25 S ultrasonic deburring system, Aesculap can deburr its bone saw blades contact-free and automatically.

Aesculap deburrs its Rapid Action saw blades using the ultraTEC A25 S ultrasonic deburring system.

component to move back and forth until they break off, leaving sharp edges.

"ultraTEC specifically integrated the ultrasonic deburring system into our process chain, in which we transport the saw blades from raw material to finished product within a dedicated workpiece carrier," explains Manuel Welte. "Without manual intervention, the saw blades are transferred via a pneumatic gripper system into the A25 S process tank, deburred and then returned to the carrier."

Up to three sonotrodes installed in the process water tank enable machining of the saw blades in a single clamping operation. The complete processing cycle for one Rapid Action saw blade takes 60 seconds and the specially developed Aesculap workpiece carrier can accommodate up to 180 parts. The ultraTEC A25 S system processes various saw blade types with working lengths from 40 to 6 mm. Following planned validation of the system, Aesculap will also be able to eliminate one of its two 100 percent inspection stations.

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Maximum deburring power for your fibre parts in just one pass

The industrial sheet metal processing sector has been under increasing pressure for years. Rising quality requirements, higher production volumes, more complex geometries and the growing demand for efficient processes are continuously driving the development of new technologies.

Significant progress has been made, particularly in the field of fibre laser cutting. This technology stands out for its high precision and speed, enabling companies to manufacture components at a level of quality that was previously difficult to achieve. However, these advantages also bring new challenges when it comes to post-processing the cut edges.

This is exactly where a new deburring solution comes into play: the EdgeBreaker® 3000 FIBER. This deburring machine has been specifically developed to meet the requirements of modern, laser cut components and promises a significant leap in both efficiency and quality in edge processing.

Fibre laser cutting often produces hard burrs along the edges of components, posing a challenge for many deburring machines. These burrs are particularly tough and cannot be removed easily, making powerful and specially designed processing methods essential.

In practice, this often means additional effort during the deburring process. Multiple processing steps or repeated handling of the workpieces may be required to achieve the desired edge quality. This not only affects processing time but also impacts the overall efficiency of the entire operation.

At the same time, edge quality plays a crucial role in subsequent manufacturing steps. Clean, consistently rounded edges create optimal conditions for paint coatings and contribute to reliable corrosion protection. Reproducible edge processing is therefore a key factor for cost-effective and dependable downstream production.

A new approach to edge processing

With the EdgeBreaker 3000 FIBER, a concept is introduced that clearly differs from conventional deburring machines. Instead of focusing solely on burr removal, the machine combines several process steps into one integrated workflow:

- Deburring
- Edge rounding
- Double-sided processing of workpieces in just one pass

A key feature of the machine is its ability to process components simultaneously from both the top and bottom. While many conventional solutions require parts to be flipped and ran through the machine again, the EdgeBreaker 3000 FIBER completes this task in just a single pass. Especially in high-volume production environments, this advantage can have a significant impact on overall productivity.

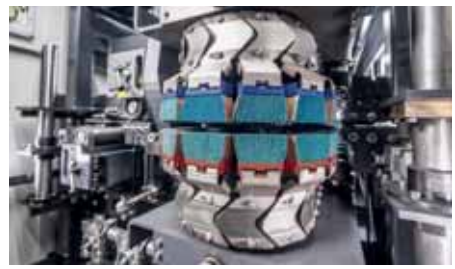
The result is a much more efficient process that saves time, simplifies handling and at the same time ensures consistently high component quality for subsequent coating and manufacturing steps.

The objective is clear: uniform, reproducible edge quality combined with high process speed.

High-performance tools for demanding tasks

Another key factor in the machine's performance lies in the tools used. Powerful abrasive belts ensure that even particularly hard burrs can be removed reliably.

The tools used ensure consistent edge processing and precise edge rounding, resulting in clean and uniform results. ARKU's quick-change system also allows abrasive media to be replaced without any tools,



providing a high level of flexibility when dealing with changing part geometries.

This flexibility is a key advantage at a time when production processes are becoming increasingly dynamic.

The quality of edge processing plays an important role in subsequent operations. Targeted edge rounding creates clean, consistent edges, providing optimal conditions for paint coatings and ensuring reliable corrosion protection.

In addition to its high mechanical performance, automatic wear compensation ensures consistently high process reliability by continuously adjusting for abrasive consumption, thereby guaranteeing uniform and reproducible processing results. In addition, the EdgeBreaker 3000 FIBER features the ARKU Wizard, an intelligent assistance system that automatically selects the appropriate settings for the deburring process, simplifies operation and supports the user in optimising the processing setup.

The machine has been specifically designed for processing fibre laser cut parts and is used wherever hard burrs need to be reliably removed while producing high-quality edges for subsequent processes. This includes, among others:

- Metal fabrication companies
- Automotive suppliers
- Mechanical engineering companies
- Manufacturers of enclosures and components
- Contract manufacturers/Job shops

Wherever high demands are placed on edge quality, the EdgeBreaker 3000 FIBER can fully demonstrate its strengths.

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Enhanced deburring capacity

Netherlands based company is further expanding its machinery fleet this year

The first new machine installed at De Cromvoirtse this year is a Q-Fin SER1200 Multibrush deburring machine. This new addition replaces the Q-Fin F600 and it provides De Cromvoirtse's customers with several advantages:

- Larger dimensions are possible, from 600 mm to 1,200 mm working width.
- Burrs and sharp edges are automatically removed, with a slight and reproducible edge radius on inner and outer contours.
- The oxide layer left after laser cutting is removed, resulting in a cleaner surface and better preparation for coating.
- Less reliance on manual deburring means less variation and a more consistent end result.
- According to De Cromvoirtse, this investment ensures greater process reliability and predictable results, even as quantities, dimensions, or complexity increase.

Practical portal enhancements

The new deburring machine isn't the only new development from the Oisterwijk-based supplier of fast custom metal. The web portal has been expanded with two practical new features that help customers specify their cutting jobs with even greater precision. For laser cutting, customers can now set the laser's starting point themselves. This prevents unwanted marks on visible parts and reduces the need for additional finishing, particularly for stainless steel with a finish.

The second new feature allows customers to specify, line by line, which side is the (foil) side, the desired grinding direction and the desired tear side for ground material with foil and tear plates. If a STEP file is uploaded without an accompanying PDF, this selection is mandatory. "This way, we prevent differences in interpretation and ensure a correct end result the first time," says a representative from De Cromvoirtse.

Q-Fin develops, builds and supplies solutions for deburring, edge rounding and finishing metal sheet parts. Additionally, it ensures efficient handling, insights in performance and high reliability. Whatever it takes to get the maximal result.

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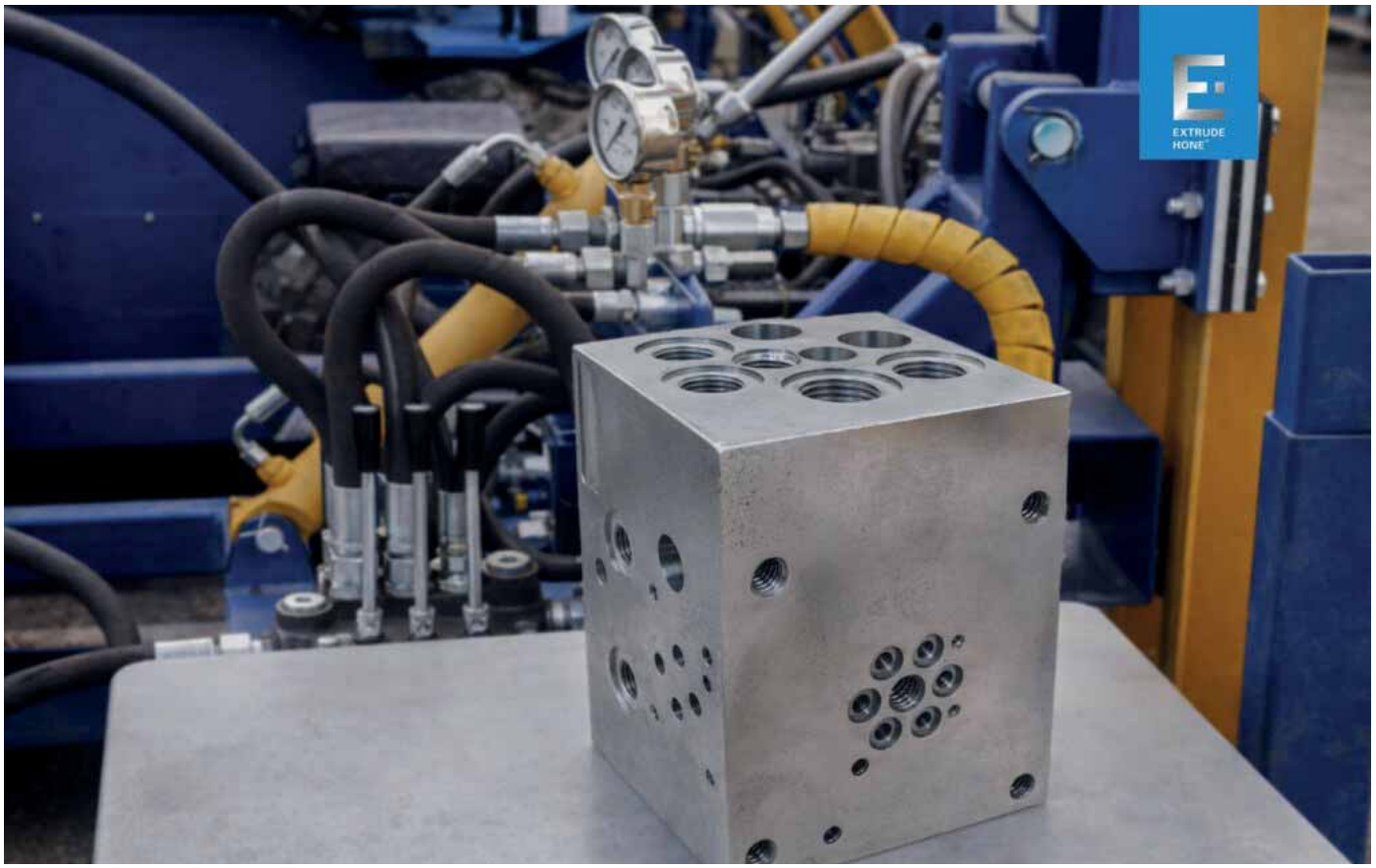

In heavy industries, machine reliability depends heavily on hydraulic system performance. From excavators to tunnel boring machines, every machine's hydraulic system relies on precision machining, clean flow channels and perfectly controlled fluid flow. At the centre of these systems are hydraulic manifold blocks. However, even with advanced CNC machining and axis milling, burrs remain unavoidable and in high-pressure environments, failing to remove burrs is not just a quality issue it is a failure mode.

Burrs in hydraulic components: A hidden but critical risk

During the manufacturing process, whether CNC machining, cutting, drilling, or die casting process, burrs form on edges, holes, ports and internal features. These sharp edges and loose particles are especially problematic in hydraulic valves, directional control systems, pumps and actuators and complex hydraulic circuits.

Risk of contamination and failure

If burr removal is incomplete, particles circulate in hydraulic oil and filters clog prematurely. Valves can also stick or fail and pumps suffer internal wear. This risk of contamination directly impacts fluid power efficiency, optimal flow in flow channels and overall hydraulic system performance. In heavy equipment, this can quickly lead to oil leakage, pressure instability, and machine downtime.

The real cost: Maintenance, downtime and jobsite delays

Poor deburring of hydraulic components has immediate operational consequences. Contamination often requires full cleaning of the hydraulic circuit and the replacement of filters and valves. Pump overhaul or replacement is also required. Even with compressed air or high-pressure water cleaning, removing embedded debris is difficult if burrs were not properly eliminated at the source.

These issues lead to expensive spare parts with increased service and support interventions. Production interruptions are also created, but the biggest impact is on operations. On a jobsite, one failure can stop an entire machine and delay project timelines, It can also trigger penalties and customer dissatisfaction. In industries relying on volume production and continuous operation, this becomes a major business risk.

Why traditional deburring methods are not enough

Many manufacturers still rely on manual deburring and pressure water cleaning as well as deburring tools or robotic tools. However, these approaches struggle with complex geometries, intersecting holes and internal ports and inaccessible internal edges Limitations include inconsistent results, operator dependence and mostly incomplete burr removal. Even specialised machining services cannot guarantee effective deburring in all internal features.

Thermal deburring

Thermal deburring, developed by Extrude Hone, is an advanced technology designed specifically for deburring hydraulic components with complex internal geometries.

The process uses a thermal deburring gas mixture in a sealed chamber. An ignition creates

a controlled, short-duration thermal reaction, sometimes referred to as explosive deburring or gas deburring. Because burrs have very low mass, they burn instantly, while the main component remains unaffected.

Complete burr removal in complex geometries

Unlike manual or tool-based methods, thermal deburring reaches every hole, port and internal channel. It also removes burrs in all directions and removes burrs within a minute. It can also eliminate loose particles. This makes it ideal for hydraulic manifold blocks.

Improving edge finish and cleanliness

Thermal deburring minimises residual contamination and improves finishing at critical edges. Benefits include cleaner internal passages, better plating preparation and enhanced quality assurance. Combined with proper post-process cleaning, it ensures components are ready for high-performance applications.

Direct impact on hydraulic system performance

Effective deburring directly enhances fluid flow and efficiency. This ensures smoother flow channels, reduced turbulence and optimal flow conditions. Component reliability enables longer pump life and improved valve function while reducing wear on seals and actuators. System stability provides consistent pressure control, improved directional control and reduced failure rates.

TEM, a practical solution for industrial performance

Today's manufacturing hydraulic environments demand higher precision, complex geometries, scalable production and strict quality control.

For manufacturers looking to reduce defects, improve product quality, minimise maintenance costs and ensure reliable hydraulic system performance, thermal deburring offers a practical, efficient and proven solution.

Thermal deburring fits seamlessly into modern manufacturing processes and is compatible with CNC machining workflows. It is scalable for volume production and suitable for multiple materials including aluminum, steel, stainless steel and cast iron.

Take the next step with Extrude Hone

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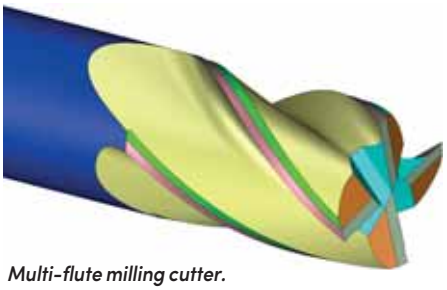
Driving efficiency and flexibility in tool grinding

With intelligent feed rate optimisation and the launch of NUMROTO X, NUM demonstrated how tool manufacturers can unlock measurable productivity gains at GrindingHub 2026 in Stuttgart

With new features for greater efficiency and flexibility, NUM set clear trends in digital tool manufacturing at GrindingHub 2026. The focus was on furthering the development of the proven tool grinding software NUMROTO, as well as the unveiling and launch of the new NUMROTO X. These advancements help to specifically optimise grinding processes and tailor software functions precisely to diverse manufacturing requirements.



Multi-flute milling cutter.

Focus on measurable productivity gains

At GrindingHub 2026, NUM presented the latest enhancements to NUMROTO, which are designed to meet the key requirements of modern tool manufacturing: greater efficiency, higher process reliability and software functions that can be specifically adapted to different production requirements.

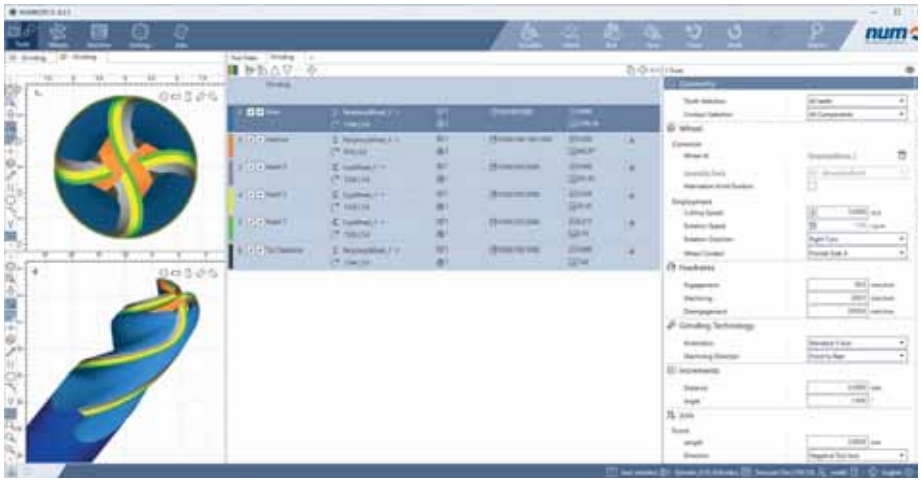
The focus is on the new feed rate optimisation feature via 3D material removal rate in NUMROTOplus. It automatically adjusts machining feed rates based on the calculated material removal volume from the 3D simulation. This is particularly advantageous for machining operations with variable material removal, such as grooving, multi-spiral tools, tapered tools, step drills, or pockets for PCD inserts.

Feed rate optimisation based on real process data

With this new feature, NUMROTO expands the possibilities for machining optimisation with an intelligent, simulation-based control system. Instead of setting the feedrate statically, it is automatically adjusted to the actual material removal conditions. This creates the foundation for significantly reducing grinding times without compromising on quality or tool life.

The function can be specifically tailored to the respective process. This includes, among other things, the maximum desired QW', the maximum permissible material removal rate, and definable feed factors during and outside of wheel contact. This is complemented by a fine-tuning function for a controlled transition during the first grinding contact. A prerequisite for optimal results is a highly precise definition of the blank used in NUMROTO.

The potential of the new function is also evident in practice. For a multi-flute milling cutter, grinding time was reduced by 14 percent. For a stepped tool with insert seats, the time savings amounted to 29 percent. Thus, feed rate optimisation makes a concrete contribution to increased productivity in tool manufacturing.



NUMROTO X user interface.

NUMROTO X brings innovation and greater flexibility

With NUMROTO X, NUM presents a new product line that sets the course for the future of proven NUMROTO technology. The software, developed from the ground up, combines decades of experience with state-of-the-art flexibility and architecture built to meet future demands.

A key development focus is on making work processes faster and more precise. New strategies for the transfer movements between grinding operations control the axes more efficiently, optimise workflows and reduce idle time. Newly implemented algorithms ensure the necessary accuracy, delivering even more precise results.

In addition, NUMROTO X offers a significantly expanded range of configurable geometric elements. The milling cutter module includes a wide selection of predefined outer shapes for cylindrical, corner and end face areas that can be flexibly combined with one another. This allows for the simple yet precise definition of complex geometries such as barrel or circular segment cutters.

NUMROTO X is offered in modules, with each module available in three tiers: Basic, Advanced and Professional. With this strategy, NUMROTO X utilises a modern licensing concept. The Infrastructure Module contains general functionalities that are essential for tool production processes. The Milling Cutter Module, on the other hand, encompasses all functions related to tool design capabilities. In this way, each user can decide whether their requirements fall under production, tool design or both.

GrindingHub 2026 as a platform for future-oriented tool manufacturing

With the innovations presented, NUM demonstrated at GrindingHub 2026 how tool grinding processes can be specifically designed to be more productive and flexible. The combination of intelligent feedrate optimisation and modular software creates concrete advantages for companies that want to evolve their manufacturing in an economical and future-oriented manner.

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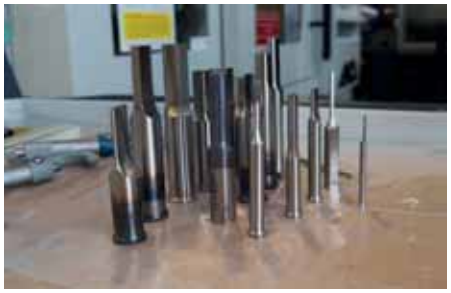
Automated punch grinding for low-volume, high-mix production

Founded in 1964 by Sebastiano D'Addato, Nuova Ret has grown from a local supplier of standard punches and ejector pins into a specialised partner for customised punching solutions. Over three generations, the company has built deep expertise in metal stamping components, progressively expanding from standard punches and ejector pins into a broader range of elements for mould makers including fixing and guiding elements, springs and gas springs.

Today, Nuova Ret employs around three dozen people and achieves roughly half of its turnover with standard parts and half with specials. The company serves an international customer base, while its roots are in Italy and especially the Lombardy region, Nuova Ret now partners closely with customers in Germany, Spain, France and Portugal, supplying punches in steel and carbide for high-speed stamping, thin blanking, deep drawing and sheet metal perforating applications.

The business is led by the second and third generation: Roberto, the current president and managing director of the company and his two sons, Marco and Andrea De Vincenti. Marco De Vincenti focuses on the commercial development of the company and long-term relationships with OEMs and toolmakers across Europe. Andrea De Vincenti leads production and technical projects on the shop floor, ensuring that investment in machinery and processes and supports Nuova Ret's promise of flexibility and fast delivery on customised punches. ANCA fits directly into that profile: a technology partner that can translate specific customer needs into practical, incremental innovations on the grinding line.



Selection of steel and carbide punches manufactured by Nuova Ret for high-speed stamping, thin blanking, deep drawing and perforating applications.

As Nuova Ret's special punch business accelerated, the company's manufacturing model changed. In addition to long runs of standard punches, it increasingly produced small lots, typically batches of five to ten pieces, of highly customised punches derived from customer drawings.

Co-developing a dedicated solution through ANCA's SAR process

To address this, Nuova Ret decided to expand the special punch line with an ANCA MX7 configured specifically for punch grinding and supported by a Special Application Request (SAR). At ANCA, a SAR is the structured process used to develop customer-specific machine configurations, automation functions and software options. A dedicated customer solutions team develops targeted auxiliary features and modifications that deliver clear, validated value in production.

Andrea De Vincenti describes the project as a genuine co-engineering effort. From the first discussions, his team worked closely with ANCA's engineers, visiting ANCA technology centres to review concepts, see comparable applications and run practical tests on early ideas. Those visits and the ongoing exchange with ANCA applications specialists and automation experts, allowed Nuova Ret to refine the requirements step by step, from basic capacity and flexibility needs down to details like how headed punches would be flipped and clamped and how mixed small batches could be combined into longer automated runs.

A central technical challenge was the fully automated handling of headed punches. These cannot simply be picked and loaded like straight cylindrical tools: the head must be correctly oriented and shielded and the clamping position must be repeatable to ensure consistent grinding quality.

Custom flip station on the ANCA Robomate: headed punches are rotated and oriented for reliable, fully automated loading into the MX7.

The SAR therefore centred on an automation concept combining the MX7 with Robomate and a dedicated flip station. In production, punches are loaded onto the pallets head-up. The robot picks each blank from the pallet and transfers it to the flip station, where the part is rotated so that it can be clamped correctly. The robot then loads the punch into the chuck with the head inside the chuck, both protecting the head and defining a stable reference for grinding. After the grinding cycle, the sequence is reversed: the robot unloads the punch, returns it to the flip station to rotate back to a head-up orientation and places it in the pallet as a finished part.

This apparently simple idea, the flip station, is what makes it possible to fully automate the complete cycle for headed punches, from blank to finished tool, even in very small batches, without manual intervention between operations.

Workholding flexibility with the GDS Shark

Alongside automation, workholding was the other decisive piece of the puzzle. Nuova Ret needed a clamping solution that would cover almost all of its punch diameters without constant changeovers. Together with partner company GDS, ANCA integrated the GDS Shark chuck system on the MX7.

The GDS Shark provides a wide clamping range, roughly from 2 mm up to 20 mm, in a single, high-precision chuck. During the loading cycle, the chuck's wide opening stroke

Headed punch being loaded head-first into the GDS Shark chuck on the MX7 – the head is accomodated inside the chuck while the shank is ground.

allows the punch head to pass beyond the jaws, ensuring the head is housed inside the chuck while the jaws clamp the shank. For Nuova Ret this means that, for the vast majority of its punch portfolio, there is no need to change chucks or collets when switching between diameters.

Furthermore, GDS developed a special series of shortened jaws specifically for Nuova Ret. This custom hardware enables the system to automate the production of short-shank punches, a high-volume item for the company that would otherwise require manual loading. The Shark is therefore a key enabler of the project's main objective: eliminating diameter-related setup time.

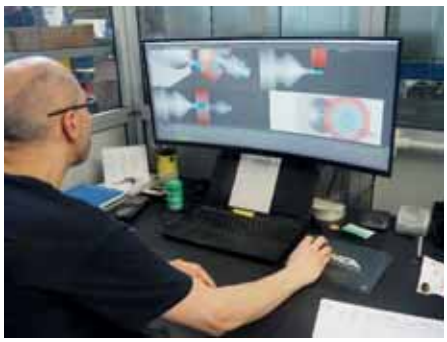
Andrea De Vincenti highlights this as one of the main outcomes of the joint development: the combination of the MX7, the Robomate with flip station and the GDS Shark created a system that is not just automated, but genuinely flexible in day-to-day use.

From left to right: Andrea De Vincenti, Roberto De Vincenti, of Nuava Ret with Lorenzo Bianchi, Sales Manager ANCA, and Claudio Innamorati, celebrating the successful MX7 punch grinding.

From concept to everyday production

To maximise the benefit from the new hardware, Nuova Ret and ANCA's applications team designed the process around ANCA's multiprogram and multipallet capabilities. Punch types that share a clamping diameter, even if they differ in length or geometry, are grouped on pallets and in the job list. The MX7 then grinds these mixed batches automatically, moving from one program to the next as it works through the pallets.

When the system was first introduced, the MX7 was planned around a traditional daily shift. Over time, Nuova Ret has progressively increased the level of automation and now typically runs two to three shifts, depending on workload, with large parts of the second and third shift being unattended production. Operators prepare the machine during the main day shift, loading the pallets and setting up either for a single larger series or for multiple small batches combined into a long automated run. The machine then continues running with minimal supervision through the evening, overnight or across the weekend.



Technical engineer Claudio Innamorati using ANCA's CIM3D software to simulate and verify punch grinding processes before production.

To extend the usable range and maintain accuracy on more demanding parts, the MX7 at Nuova Ret is also equipped with a tailstock and a pop-up steady. The tailstock allows the machine to be used in a between-centres configuration for longer punches, while the pop-up steady supports slender parts directly under the grinding point, reducing deflection and vibration. This ensures that even long, thin special punches can be ground to the required tolerances without sacrificing cycle time.

Operator perspective: Advantages in handling small batches

For Nuova Ret's engineers and operators, the value of the solution becomes clear in everyday use. Technical engineer Claudio Innamorati emphasises how the new line has changed the handling of small batches. Instead of spending a significant part of the day changing clamping devices, setting up for each new diameter and manually loading headed punches, operators now focus on preparing pallets and programs, while the MX7 and Robomate take over the repetitive work.

Claudio Innamorati points out that this not only saves time but also reduces the potential for human error when working under pressure to meet short lead times. The repeatability of the GDS Shark chuck and the reliability of the flip-station handling give confidence that parts will be ground consistently from batch to batch, even when dozens of different variants run in the same unattended cycle.

The Nuova Ret project is a clear example of how ANCA's SAR approach turns specific customer challenges into incremental innovations on established platforms. By combining the MX7, a tailored automation concept with flip station, the GDS Shark workholding system and process know-how, ANCA and Nuova Ret have created a solution that fits tightly with the company's core strengths: technical competence, responsiveness and the ability to deliver customised punches quickly to customers across Europe.

For Marco and Andrea De Vincenti, the new line is not just an isolated investment, but a step in a longer-term strategy: partnering with suppliers who understand their business model and are willing to co-develop solutions. For ANCA and GDS, it demonstrates how close collaboration with an ambitious punch manufacturer can drive practical, customer-oriented innovation one SAR at a time.

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Data-driven dust collector control

by David Van Eylen, development engineer at Donaldson, a leader in technology-led filtration products and solutions, serving a broad range of industries and advanced markets

Grinding and surface finishing processes generate significant amounts of fine and potentially hazardous dust, making effective dust control a critical consideration. Without proper management, airborne particulates can compromise surface quality, damage sensitive equipment, reduce operational efficiency and pose serious health and safety risks to workers.

An intelligent, data-driven dust collection system can help facilities proactively manage these challenges, enabling more consistent performance, improved safety and greater operational visibility. Advanced sensors and cloud-based connectivity support real-time operational data tracking, performance optimisation and proactive maintenance, helping drive plant efficiency, reduce unscheduled downtime and minimise costs.

Such an intelligent approach uses tailored cleaning modes, precision pressure control, integrated remote monitoring, automated airflow management and proactive downtime prevention. By improving dust control effectiveness, it may become viewed as a strategic advantage, rather than a complex burden for the grinding and surface finishing industry.

Intelligently controlling a dust collector supports efficient handling of manual tasks and improved cleaning cycles. Such an IoT-enabled platform allows the system to collect and analyse data in real-time, so that alerts and notifications can be delivered directly to a user's smart device, enabling remote troubleshooting. This simplification of dust collector management may translate into time and resource savings, allowing personnel to dedicate more of their focus to core activities.

There are several key ways that a more intelligent system simplifies dust collector management. This includes Cloud-based monitoring capabilities, more precision control, tailored cleaning regimes and simplified system management.

Cloud-based monitoring

Implementing intelligent dust collector management facilitates the proactive resolution of performance issues through real-time data and remote trend analysis. This allows for the early detection of anomalies, such as rising differential pressure or inefficient cleaning, enabling technical interventions before operations are impacted. The remote analysis of cleaning performance data also supports more precise adjustment of system parameters to maximise efficiency and conserve resources.

Regulatory reporting may also be streamlined through Cloud-based reporting and automated data logging, which support environmental standards. Remote diagnostic capabilities also mean that for certain issues, it may be possible for troubleshooting to be initiated remotely, which can help reduce the time and costs associated with manual inspections.

The use of a more intelligent dust collector control system also helps operators schedule filter replacements based on degradation trends rather than terminal failure. This helps avoid unplanned downtime and identifies the optimal point for filter replacement.

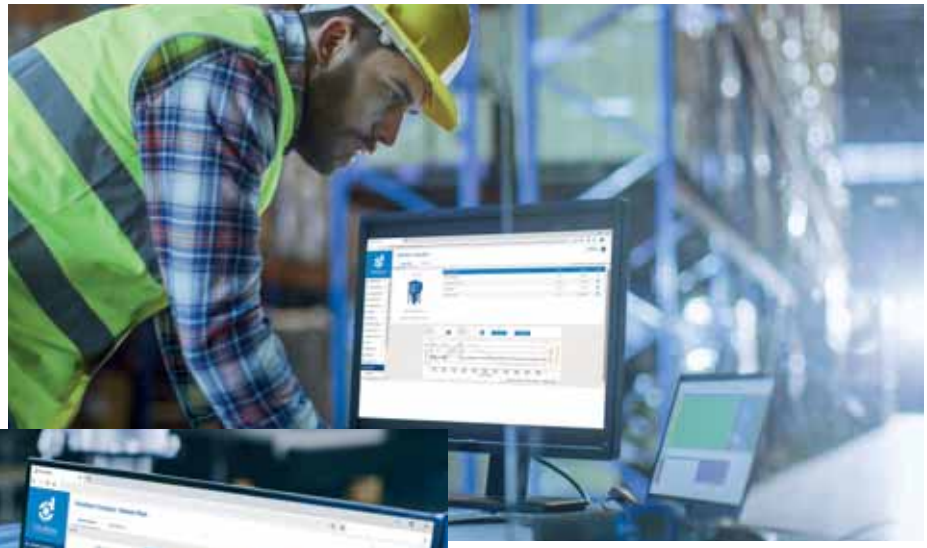
Precision control

The advanced programmability of intelligent dust collector control systems means that critical pressure setpoints can be easily defined for timely alerts. Precision differential pressure control means that cleaning cycles are triggered at the exact moment required. This supports the efficient use of compressed air, which can help

extend the life of the filter media. Multiple cleaning options can also be tailored to the specific dust type and application requirements.

By automating cleaning cycles and triggering timely alerts, the system supports a proactive maintenance regime, helping to eliminate reactive maintenance after unexpected failure. This can help minimise unscheduled downtime and maintenance can be scheduled rather than halting production.

Likewise, intelligent controllers can help extend filter life because pulse cleaning only occurs when technically necessary. This helps prevent over-cleaning, which can prematurely wear out filter media and waste expensive compressed air, thereby optimising Total Cost of Ownership. This also supports energy efficiency goals, as a clean, well-maintained system operates with lower resistance so that the fan motor operates at a lower frequency, thereby reducing electricity consumption.



Operational consistency can be further enhanced with tiered user access levels so that performance parameters remain within established tolerances. A greater level of granular control also helps operators achieve optimal system performance tailored to specific application requirements.

Tailored cleaning

Rather than the traditional one-size-fits-all approach to cleaning, an intelligent dust collector control system supports versatile cleaning modes that more specifically match application needs. Operators can select the cleaning mode best suited for their specific dust collection challenges to help provide effective and efficient dust removal within the facility.

Management simplification

By integrating airflow control functionality directly into the dust collector's primary control system, the complexity of the infrastructure often associated with traditional extraction setups can be reduced. Purchasing, installing and maintaining standalone airflow control devices or manual dampers may no longer be required with this unified approach. Automated adjustments mean that fan speed is automatically and continually optimised based on real-time conditions. This supports consistent performance by freeing up technical personnel from having to make periodic manual adjustments, allowing them to focus on other maintenance or production tasks.

Smart controllers can also help address the high cost of unplanned interruptions. By using integrated sensors to track metrics such as fan energy, hopper plug status and pulse valve health, a smart system can help identify potential failures before they occur.

Optimal performance

The implementation of an intelligent control system can transition dust collector equipment from a passive utility into a strategic asset by providing the granular control and remote insights necessary to achieve optimal performance. The ability to manage multiple locations through a single web-based dashboard supports operators' efforts to provide peak performance across their entire enterprise. This connectivity can also help streamline operators' environmental, health and safety compliance efforts by automating data collection for audits, thereby reducing manual entry errors.

Through continuous monitoring and real-time analytics, these systems facilitate proactive resolution of performance issues and help them identify anomalies early to mitigate unscheduled downtime. Maintenance can be strategically scheduled during planned facility shutdowns rather than halting production during peak hours, thereby addressing the inefficiencies associated with reactive maintenance.

Intelligent controllers also support energy efficiency goals by using versatile cleaning modes and automated fan speed adjustments, with the aim of minimising electricity and compressed air consumption. By tracking filter degradation trends and having pulse cleaning only occur when technically necessary, the system is designed to prevent over-cleaning, which can help extend filter life and optimise total cost of ownership. By simplifying complex management tasks and providing a comprehensive view of facility operations, an intelligent control platform empowers operators to manage dust collection effectively to support more streamlined, efficient and cost-effective processes.

***This information is provided for general guidance only and should not be considered legal, regulatory, or technical advice.**

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A turnkey solution for multiple extraction systems

How Nederman provided multiple extraction solutions for one facility

When you need solutions for multiple particulate control, it isn't worth over-complicating things. It makes sense to work with someone who can handle it all for you.

Nederman recently completed an integration of a large suite of multiple turnkey extraction systems at the Northern Regional College (NRC) in Ballymena, Northern Ireland.

The NRC is one of the main providers of further education in Northern Ireland, teaching thousands of students and apprentices in Science, Health, Advanced Technologies and more. Some of its state-of-the-art workshops required updated, state-of-the-art extraction systems to improve air quality.

Project overview: A multi-system approach
The key challenge set to Nederman was to provide effective, compliant, energy-efficient Local Exhaust Ventilation (LEV) across highly varied training environments. It managed the design, supply, manufacture and installation of the following critical extraction systems:

- Wood dust extraction for the main woodworking workshop.
- Welding fume extraction for three distinct welding areas, including robotic welding.
- Vehicle exhaust extraction for two dedicated automotive training bays.

Each system was commissioned, tested and certified in full compliance with current health and safety requirements, guaranteeing a cleaner and safer learning and working environment for both students and staff.

Advanced wood dust extraction system

The NRC's woodworking facility required a robust, high-efficiency extraction solution to not only control airborne wood dust but meet ATEX standards for potentially explosive dust.

Key features and specifications:

Extraction points: Direct extraction connections to eleven woodworking machines, including routers, spindle moulders, circular saws, and planers.
Filtration: External, ATEX-rated Nederman LBR-B filter unit equipped with:
Airflow management: A high-efficiency CombiFab FZ56-R355 15kW fan operating via an inverter drive for energy optimisation.
Ductwork: Galvanised steel smooth bore ductwork (QF) installed at a high level for low resistance.
Monitoring: Integrated Insight Control Panel for real-time performance monitoring and cloud-based analytics.

This dust extraction system delivers significantly improved air quality, optimised performance with real-time monitoring and enhances worker and facility safety through its comprehensive ATEX compliance.

Specialised welding fume extraction systems

Nederman installed four distinct systems to manage the hazardous fumes generated in the welding workshops:
Main welding workshops (2 Systems): Two identical low vacuum systems, each serving eight welding bays (16 total).
Oxy/Acetylene booths: Dedicated system for four booths.

All welding extraction fans are mounted externally, inverter-driven for intelligent airflow control, and designed to exceed required capture levels in accordance with HSG 258.

Vehicle exhaust extraction systems

Two identical low vacuum systems were installed for the automotive training bays to safely remove exhaust gases during vehicle operation:
System components: 2 x Series 865 spring-recoiled exhaust reels with 10 m hoses.
Control: Hoses feature automatic microswitches that trigger the external Nederman N24 0.9 kW fan to start and stop when the hoses are engaged/disengaged, ensuring compliance with occupational exposure limits and saving energy.
Performance: Airflow of 560 m^3/hr per system.

Health, safety and compliance

The entire project was executed and commissioned to the highest standards, ensuring long-term safety and regulatory adherence. The NRC now benefits from:
Full regulatory compliance: Certified conformity with COSHH, HSG 258 and ATEX regulations.
Commissioning and training: Certified explosion relief and isolation components, on-site

operator training, and comprehensive operation and maintenance manuals.
Ongoing support: The college benefits from Nederman's service contracts, which include regular LEV testing and certification, preventative maintenance and technical support, guaranteeing continued reliable, safe and compliant operation.

By choosing Nederman for its extraction system upgrade, Ballymena NRC achieved:
Cleaner, safer workshops: Improved air quality across woodworking, welding and automotive training workshops.
Reduced energy consumption: Lower operating costs through intelligent inverter-driven fan technology and demand-based control systems. Recirculating system in the wood workshop to return the warm, filtered air back into the workspace.
Future-proof infrastructure: Systems designed with the potential for capacity expansion and backed by long-term service and compliance support.

Nederman's end-to-end expertise in industrial air filtration provides the NRC with a turnkey solution that prioritises worker health, environmental compliance and operational efficiency, setting a high standard for modern technical college facilities.

Looking for an extraction and filtration system in Ireland?

If your business needs a turnkey extraction solution or other industrial air filtration systems, contact Nederman today to discuss how it can help create a safer, compliant and more efficient workplace for you.

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New ATEX dust and fume extraction range now available from Filtermist

The brand-new AD EX range from sister company Absolent delivers fully ATEX rated dust and fume extraction, engineered for production environments where safety and compliance matter most.

This new range comprises three models, the AD051EX, AD101EX and AD151EX, each certified for installation in ATEX Dust Zone 22 and suitable for dust explosion classes ST1, ST2 and ST3. With airflow capacities from 1,200 to 13,500 m³/h, the range scales from smaller process environments through to large-scale industrial installations.

At the heart of the AD EX range is Absolent's proprietary Vertical Airflow Technology, which delivers a downward contaminated airflow pattern through vertical filter elements combined with a downflow pulse-jet cleaning system. This design achieves high pre-separation, directs dust efficiently to the collection hopper and minimises accumulation on filter elements. This results in stable, long-term performance, extended filter service life and reduced maintenance requirements

The AD EX range offers multiple explosion protection configurations to suit site-specific safety requirements, available space and process risk.

Three types of filter media, eco polyester, standard polyester and polyester nano fibre, are available in anti-static versions for full ATEX compliance or can be selected in non-ATEX versions if handling statically charged dusts.

A key innovation in the AD EX range is Absolent's unique CleanChange™ filter replacement mechanism, which allows filter cartridges to be accessed and removed from the clean side of the unit, without tools and without entering the contaminated section. Combined with a quick-release access door incorporating a system safety switch, this significantly reduces operator exposure during maintenance and minimises production downtime.

On-demand pulse-jet cleaning, optimised airflow design and optional inverter-controlled fans work together to minimise energy consumption while maintaining consistent filtration performance. Units are constructed from Galfan pre-coated steel which offers twice the corrosion resistance of conventional hot-dip galvanising, ensuring long-term durability in demanding industrial environments and contributing to a low whole-life cost.

"The AD EX range represents a significant step forward for customers operating in ATEX classified environments," comments Filtermist's global commercial director, Graeme Bell. It combines proven Absolent filtration technology with the flexibility and compliance that industry demands. As part of Absolent Air Care Group, Filtermist is uniquely placed to provide expert specification support, installation and ongoing aftermarket care for the AD range, as well as our Dustcheck dust collectors and process filters."

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Combining indexing and rotary spindle technologies in one advanced blast system

Combining the engineering expertise behind the Guyson Multiblast® RSB and RXS systems, the Multiblast RXSB is a unique indexing and rotary spindle blasting system.

The cabinet has been designed to facilitate the batch processing of large components. Its indexing functionality allows for up to four components to be loaded and processed for each blast cycle. This significantly increases throughput compared with a traditional RSB system.

Components are processed using two rear mounted pressure feed blast nozzles, both of which are fully adjustable to ensure optimal coverage. For this application, the first blast gun drive is configured to blast the internal surfaces of the component, while the second gun drive treats the external surfaces. Both blast guns move vertically along the component via their respective gun drives. Combined with spindle component rotation, this ensures comprehensive coverage and consistent blast results.

Full control of the blasting parameters is provided through an integrated, user-friendly HMI/PLC interface. Operators can adjust settings such as blast gun traversal speed, number of passes and air wash functionality, enabling each programmed recipe to be optimised for the specific application.

The system is completed by a Guyson Model CY600/12 cyclone reclamation system, together with a Model C800 dust collector. The CY600/12 efficiently draws spent blast media from the base of the cabinet and separates reusable media from dust and debris. To ensure uninterrupted operation, the system is also equipped with an automatic media top-up hopper, which periodically adds fresh blast media to reclaimed media as required.

Find the right Multiblast system for your application

To help customers identify the most suitable system for their requirements, Guyson offers a free, no obligation test and evaluation service. Backed by industry leading facilities and an experienced service team, this process provides thorough qualification testing and tailored recommendations to support informed decision making.

Euroblast Select 300: Why multi-operator manufacturers are switching to height-adjustable finishing systems

In many surface finishing environments, operators spend hours working at fixed-height machines that are not designed to meet the needs of different users, workflows or shift patterns. Over time, this can lead to fatigue, slower output, inconsistent finishing quality and avoidable downtime.

That's why more workshops are investing in Guyson's height-adjustable surface finishing systems. The Euroblast Select 300 combines ergonomic flexibility with production-focused engineering, to help teams work more comfortably without compromising throughput.

The design behind the Euroblast Select 300

The Euroblast Select 300 incorporates the proven design features of the Euroblast 6, Guyson's most popular standard size manual blast machine, with seamlessly powered height adjustment capabilities of up to 300 mm. This allows users to efficiently adjust their armhole centre line and viewing window to match individual working preferences and task requirements.

The height-adjustable machine also offers a wide range of parts loading configurations, including front, side and top-opening door options, as well as the option for a turntable setup, for optimised blasting of larger, more complex geometries. The Euroblast Select 300 is also configurable with suction and pressure feed variants, to suit different finishing application needs.

The result is a more adaptable finishing process that enhances operator comfort, supports ergonomic working practices and helps maintain consistent production efficiency throughout the working day.

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Vapormatt Leopard Cub

Three hours of manual cleaning reduced to 20 minutes. Same component, better result. That is what one major jet engine manufacturer achieved when it replaced its manual wet blasting operation with a Vapormatt Leopard Cub for NDT preparation of stage one compressor hubs.

The problem with manual preparation is not just the time, it is the consistency. Each fir tree slot on a compressor disc has to be blasted at every angle, ten times per angle, for exactly the right duration. One experienced operator was using a windscreen wiper blade on a manual wet blasting machine as a metronome to time how long he blasted each angle of every slot. Even then, the process was vulnerable to fatigue and human error and every hub had to be thoroughly inspected after blasting to check the job was done. Difficult, when the fine novaculite media makes it visually hard to tell whether a surface has been blasted at all.

It also carries serious financial stakes. These hubs cost at least $50,000 each and the maintenance specification only allows the same area to be processed twice before the part is scrapped.

The Leopard Cub removes that risk entirely. It runs a patented micro blast gun that can position to within 0.5 mm increments, reaching every individual angle within each fir tree slot with a precision no manual operator can match. A standard MK3 gun handles the larger surface areas while a multi-axis robot, combined with the machine's turntable, means every part of the hub is blasted for precisely the correct time and intensity, every cycle, without anyone visually checking it mid-process.

Critically, the blast consistency itself does not drift. Vapormatt's technology keeps slurry concentration and blast flow constant year after year, even as internal components wear, because in an automatic machine there is no operator to notice and compensate for variation.

The result is 20 minutes per hub instead of three hours, zero human error and full traceability on every parameter. For a safety-critical component that cannot afford a missed indication or an unnecessary scrap, that is exactly what NDT preparation should look like.

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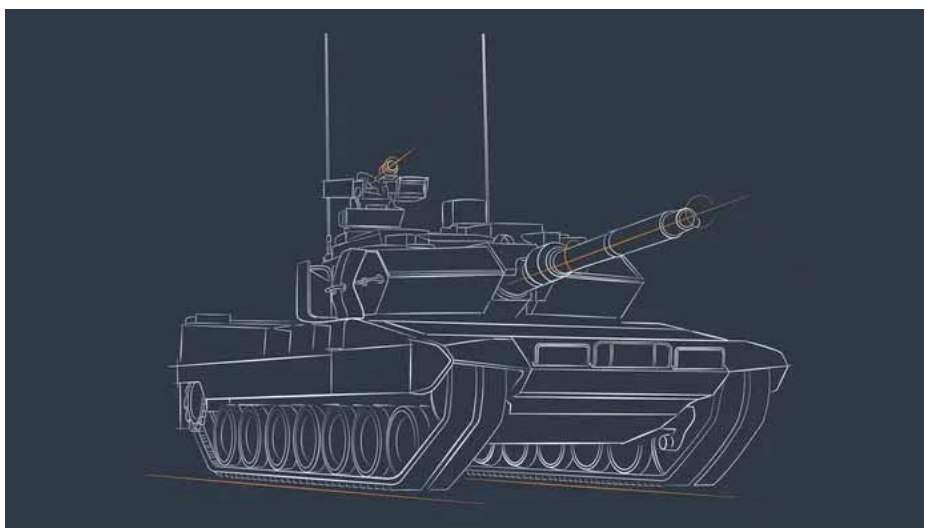
Surface finishing methods for the defense industry

Ensuring precision, durability and operational safety

In the military and defense industry, precision, durability and reliability are essential. The extreme operating conditions, from high mechanical stress to exposure to corrosive substances, place the highest demands on every component. Whether firearms, armour-plated vehicles, aerospace parts or naval equipment: all must ensure exceptional strength, resistance and operational safety. Mass finishing and shot blasting processes play a key role in surface finishing and component preparation. Their targeted effects ensure that components of military systems meet strict specifications and comply with the highest standards in terms of precision, corrosion protection, fatigue strength and reproducibility.

Key requirements in the military and defense sector

- Durability
- Precision
- Corrosion resistance
- Fatigue strength
- Applications



Airborne systems/Air Force

Structural components, landing gear, turbine blades and even drone parts must be free from contaminants and properly prepared for protective coatings. Optimal surface finishing through mass finishing and shot blasting provides the required smoothness, reduces friction, improves aerodynamics and enhances fatigue resistance.

Armour-plated vehicles

Components such as tracks, chassis and armour plates gain significant fatigue resistance through shot peening. By introducing compressive stresses into the material, shot peening prevents premature failure of critical vehicle parts.

Firearms/handguns

The components of small arms such as pistols and rifles must meet the highest standards of surface quality to ensure the smooth operation of their mechanical systems. Coatings of all kinds, as well as targeted surface densification, can be achieved through shot blasting and mass finishing.

Ammunition/cartridges

Ammunition components go through numerous production steps such as cleaning, de-greasing, pickling, passivating or polishing, processes particularly well suited to mass finishing. For large-caliber ammunition and

projectiles, shot blasting is the preferred method, for example to roughen surfaces and ensure optimal adhesion of paints or coatings.

Navy/shipyard

Propellers, hulls and other ship components must be cleaned and roughened to improve the adhesion of corrosion protection coatings. Without this pretreatment, components would rust and deteriorate quickly, significantly reducing their service life.

The advantages of mass finishing and shot blasting over alternative methods

Shot blasting and mass finishing processes are indispensable for components in the military and defense industry, whether as final finishing processes or as intermediate steps prior to coating. As in other industrial sectors, these surface treatment technologies stand out for their efficiency and cost-effectiveness, as large quantities can be processed quickly and with high scalability. In an industry where manual labour is still common, the high level of automation and efficiency achievable with mass finishing and shot blasting can make a decisive difference.

But beyond being cost-effective, shot blasting and mass finishing are also technologically superior solutions for surface treatment in the defense field.

Manual processing of defense components remains widespread but is laborious, time-consuming and expensive. Moreover, manual polishing cannot achieve reproducible results. The greatest challenge, however, is the shortage of skilled workers, well-trained personnel for such repetitive and physically demanding tasks are increasingly hard to find, particularly in industrialised countries.

Surface treatment methods such as electroplating or chemical processing can improve corrosion resistance but often do not enhance fatigue strength. They are also less effective in reducing surface roughness or preparing components for subsequent treatments, factors that are crucial for mechanically stressed parts. These methods are also less suitable for large-scale cleaning or stress-relief applications.

Laser and thermal processes have their own limitations as well. They are not always suitable for preparing surfaces for protective coatings, especially for large defense components. Mass finishing and shot blasting provide a more comprehensive approach to surface preparation. They not only clean and smooth surfaces but also enhance durability and optimally prepare parts for further treatment.

Conclusion

Shot blasting and mass finishing are ideally suited for processing all types of military and defense components, from small cartridge cases to parts for tanks and aerospace systems. The wide range of processing possibilities, combined with the high cost-effectiveness and automation potential of these technologies, makes them superior to many competing finishing methods. Virtually all equipment and processing systems used in conventional surface finishing can also be applied in the defense industry.

Rösler UK, at its Knowsley Customer Experience Centre (CEC), offers testing of customer parts, process development and subcontract finishing. Consumable products are delivered out of the site on a three working day basis. Technical managers are backed up by a service, after sales and customer service department.

The CEC is equipped with mass finishing machines, shot blasting machines, centrifuges for water treatment and post-processing machines for 3D parts. It has the ability to determine the best process for part finishing and wastewater treatment. Furthermore, Rosler can evaluate and demonstrate the results obtained using a complete internal measurement laboratory.

The R&D activity, integrated into business processes, can support special developments, fostering innovation and continuous improvement.

Rösler UK produces, supplies, installs, commissions and services a range of surface finishing equipment and related abrasive media and compounds, all of which is supplied from within the group. The company views quality as the supply of efficient service in terms of reliability, performance to specification, delivery, cost and financial control.

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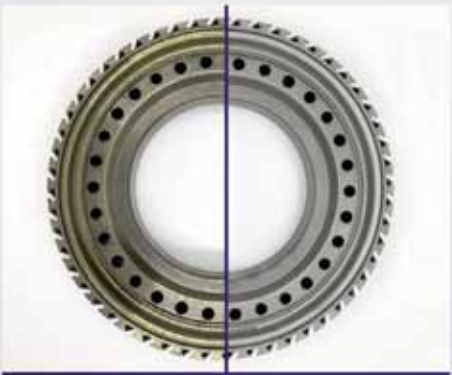

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