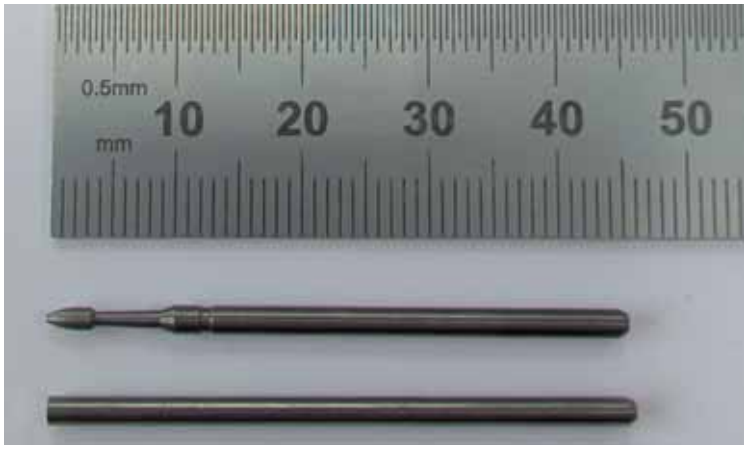
GRINDING & SURFACE FINISHING

JUNE 2025



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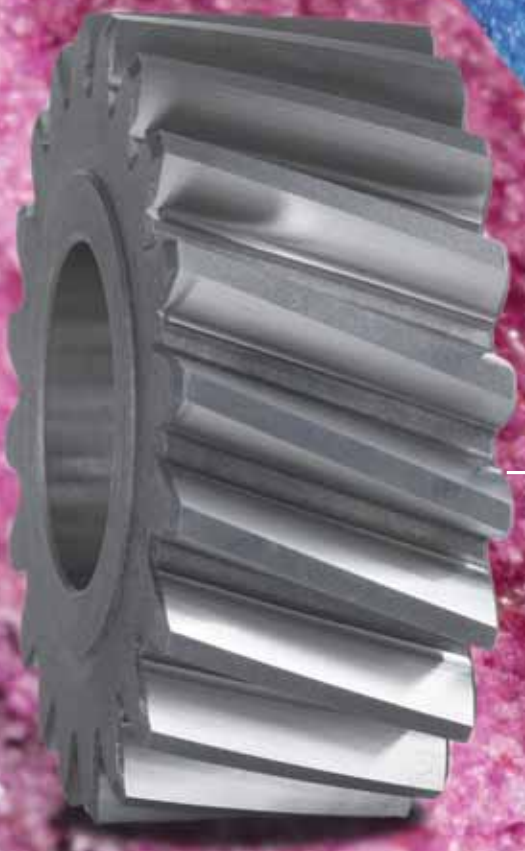
Polish Grinding of Gears

Polished



Ground

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GRINDING & SURFACE FINISHING

JUNE 2025 • Volume 23 • Issue 3 • ISSN 1740 -1100

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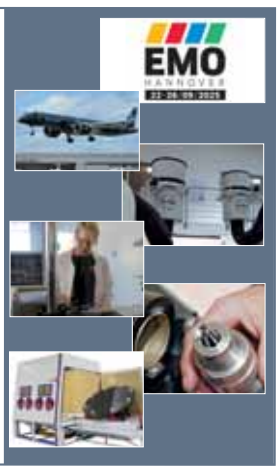

Published by Roger Barber Publishing

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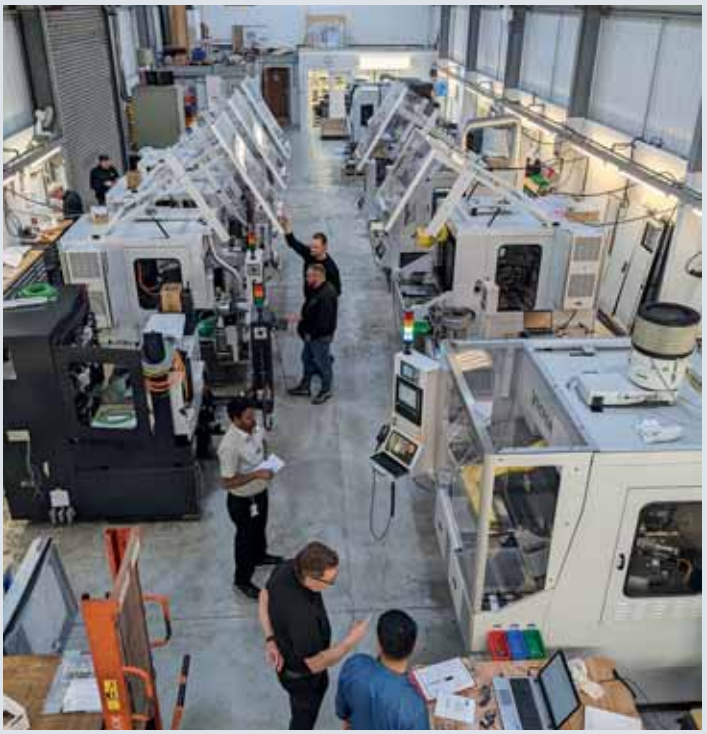
Print:
Holbrooks Printers Ltd,
Portsmouth, Hampshire

Grinding & Surface Finishing is published five times a year and mailed to a controlled circulation of readers with a legitimate interest in the content.

Curtis Machine Tools (CMT)

Personified-Precision. Performance and Partnership

Curtis Machine Tools (CMT) is a globally respected leader in the design and manufacture of high-precision cylindrical grinding machines. For decades, CMT has been at the forefront of grinding technology, delivering cutting-edge solutions that meet the exacting demands of the automotive industry, with CMT well established as a leader for fuel injection and turbocharger grinding processes. CMT is also active in the aerospace, defence, medical and general precision sectors.



Headquartered in the United Kingdom, CMT brings together world-class mechanical engineering expertise and advanced automation technology. The result is a robust, modular platform of grinding machines that are engineered for scalability, high-volume throughput and extraordinary accuracy. From complete turnkey solutions to customised production cells, CMT works closely with clients to maximise productivity, reduce manufacturing costs and maintain exceptional quality standards.

At the heart of CMT's business is a philosophy built on continuous innovation, a deep commitment to customer collaboration and a passion for pushing the boundaries of grinding performance. Each CMT machine is more than a product, it is a partner in your production success, built to meet today's challenges and ready to evolve with tomorrow's demands.

Precision Personified: Application highlight

On the cover: Two solid carbide dental burrs, peel ground from solid blanks in just 30 seconds per part using the Vector Quad. This process utilises a metal bond diamond wheel operating at 140 m/s, paired with 100 percent closed-loop post-process measurement, ensuring profile and diameter control within an exceptional ±5 µm tolerance. An outstanding demonstration of high-speed, high-precision grinding.

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From left to right: Stephan Stoll, COO, Sandro Bottazzo, CEO and Daniel Huber CTO.

Studer looks back on a solid 2024 financial year

The Swiss manufacturer of precision cylindrical grinding machines improved its market position worldwide, driving forward technological innovations and further increasing operational efficiency

This year's annual Studer press conference was held live from the Fritz Studer AG studio in Steffisburg, Switzerland, in front of numerous international media representatives. "Thanks to the high diversification of our portfolio, we can look back on a solid financial year 2024 with growth in several markets and industries," said Jens Bleher, who has been CEO of Studer since 2018, joined the management of the UNITED GRINDING Group as COO in April 2025. Jens Bleher is handing over the CEO position to long-standing CSO Sandro Bottazzo. The challenging economic and geopolitical environment required particularly intensive efforts, as Jens Bleher emphasises: "In addition to quality, the focus of activities at Studer is therefore on increasing productivity, intensive cost management and the introduction of new, innovative technologies. Studer remains a reliable partner for our customers and sees itself in an excellent position to face global competition."

Studer maintained its market share worldwide and even expanded it in individual countries and regions, explained Sandro Bottazzo, new CEO and chairman of the management board since March 1st, 2025. He added: "We are continuing to expand our leading position in the universal cylindrical grinding machine market step by step."

The development of new customers was very positive, with a year-on-year increase to around 43 percent. Strong segment were the Asian automotive and supplier industry, tool and die and the machine tool industry. Studer continued to expand its presence in the aerospace sector and strengthen its market position, similar to the previous year. Overall, order intake was only slightly below last year's figures, as anticipated.

Another record turnover in customer care

The quality manufacturer of cylindrical grinding machines recorded a very good development in incoming orders, particularly in North America. Asia, which remains the largest sales region and the Latin, Northern and Eastern European countries also posted strong results. By contrast, Central Europe and Germany in particular, fell short of expectations.

The Customer Care division performed very well, again posting record sales in 2024. The consistent expansion of international and multilingual service coverage with customer-facing and decentralised service specialists proved to be a complete success, Sandro Bottazzo confirmed. The spare parts business, maintenance and machine overhauls and conversions achieved record sales and the service business also remained at the previous year's very high level of capacity utilisation.

An important pillar of Studer's success was again its broad portfolio. The CNC universal cylindrical grinding machine segment was particularly strong, with the S33 as the best-selling machine, followed

by the S31 and the favoritCNC. Sales of the ultra-modern S41 in the premium segment were also solid. The second strongest segment was machines for internal cylindrical grinding with a robust sales performance. By contrast, sales of production and conventional machines fell short of expectations.

New favoritCNC and innovative grinding technology

Innovation and the development of modern and reliable grinding technologies for the benefit of customers remained the focus for Studer in 2024, said CTO Daniel Huber. One of the main development projects was the new generation of the popular favoritCNC universal cylindrical grinding machine. Among other things, it now features the latest FANUC controls and a "Conventional Mode". This mode gives customers the option of working as they would on a conventional grinding machine, making the transition to CNC particularly easy. The many other new features include the option of automation and more powerful grinding spindles.

Another development focus is the new universal W-axis, which will be available for the S33 and S31. This is integrated onto the Z-slide and enables different workpiece lengths to be ground automatically and without operator intervention. The two main components, the tail-stock with fixed centre and the tailstock spindle with driven centre as well as other assemblies such as measuring heads, offer innovative grinding technology advantages: As an absolute innovation, the direct force measurement allows a real force-controlled clamping process and thus maximum precision, repeatability and enables small clamping forces for fragile parts.

New applications for SmartJet® and WireDress®

Daniel Huber was delighted with the industry-wide success of the SmartJet coolant concept developed by Studer. Last year, the field of application of this particularly efficient and sustainable system was further expanded, including optimisations for thread grinding and plug-in coolant nozzles for different grinding wheel profiles. There are also new developments for the innovative WireDress dressing process developed by Studer for metal-bonded CBN and diamond grinding wheels. "We have further developed WireDress for dressing internal grinding wheels," said Daniel Huber. This means that the innovative non-contact dressing system can now be used for external and internal grinding wheels in the same setup.

In addition, the CTO emphasised that the conversion of all relevant CNC platforms to C.O.R.E. has now been completed. The UNITED GRINDING Group's modern and uniform hardware and software architecture is revolutionising the operation and capabilities of grinding and machine tools. Based on C.O.R.E., the Group will continue to develop state-of-the-art software and features for the benefit of customers in the future.

Enhanced spindle expertise

Stephan Stoll, COO of Studer, then gave an overview of the Operations division. Despite the generally tense market situation, the manufacturing and assembly resources were largely utilised with the Studer machine business, the extensive inter-company activities within the UNITED GRINDING Group and the development of future-oriented prototype systems.

Several relevant optimisation projects were successfully implemented, such as the strategically important expansion of internal spindle expertise. In addition to the commissioning of an automated, highly efficient spindle shaft production facility, all assembly processes were consolidated and enriched with state-of-the-art inspection and testing equipment. Highly specialised specialists and powerful assembly, data analysis and diagnostic tools allow Studer, as a Group-wide competence centre, to produce and further develop spindles to the highest standards.

The internal electrical pre-assembly has also been completely renewed. "We are now able to produce everything from individual cable sets to fully wired, complex electrical control cabinets in a highly efficient, order-specific and just-in-time manner," said Stephan Stoll.

In addition, intensive planning for the comprehensive redesign and automation of the internal logistics infrastructure was completed last year. The implementation of this major Studer project is already in full swing, commissioning is scheduled for December 2025.

Lighting converted to LED

Studer was also committed to increasing sustainability and efficiency in its own operations in 2024. The switch to LED lighting was largely implemented and various systems for operational supply were replaced with the latest generation of energy-efficient devices. The new logistics facility will also make a significant contribution to reducing energy consumption at Studer.

In addition, a wide range of digitalisation projects are being driven forward to tap into further efficiency potential in all areas of operations, Stephan Stoll discussed.

Jens Bleher concluded by emphasising the great importance of excellently trained and motivated employees for Studer's long-term success as a technology company: "We are fully committed to vocational training. More than 11 percent of our workforce are apprentices."

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Ghiringhelli's solutions to modern automotive challenges

by Claudio Tacchella

The APG-M centreless grinding machine has six CNC axes and is controlled by a CNC Siemens Sinumerik-One with HMI interface which belongs to Ghiringhelli.

In the current vibrant automotive environment, marked by an epoch-making transition towards a new boost and a growing focus on production efficiency, the implementation of state-of-the-art production technologies plays a paramount strategic importance. In this ever-changing scenario, the ability to provide combined and tailor-made solutions stands for a distinctive feature for automotive suppliers. A remarkable example of such an approach is portrayed by a new application case developed by the Italian manufacturer Rettificatrici Ghiringhelli based in Luino (VA), together with a leading German automotive supplier (OEM), with the aim of optimising the grinding process of many types of shafts meant to multiple applications in the automotive field, such as steering systems, electric braking systems and motion control devices including seat movement and door opening.

Technical challenges and customer's requirements

The customer's specific requirements were focused on the grinding of shafts with diameters between 10 and 30 mm and lengths ranging from 45 to 250 mm with the need to manage production batches that could vary from one to three pieces per cycle. A key requirement was the need to combine high machine versatility and flexibility with a considerable hourly production of 480 pieces/hour. At the same time, the customer had expressed a specific request for a fully automated solution, able to reduce man's direct action in the production cycle and in line with industry trends. To meet these urgent needs in an accurate and performing way, the company Ghiringhelli implemented its expertise in industrial automation, thus developing a combined solution which worked in synergy with a new high-performing centreless grinding machine. The implemented solution envisaged the integration of an automatic loading and unloading system designed and accomplished by Ghiringhelli with a pre-existing robotised cell supplied by the customer. The Ghiringhelli piece handling system was configured with a loader, a feeder and a chain unloading system with a CNC gantry-type loader with three axes, which guaranteed high accuracy and speed in the component handling steps.

The flexibility of the Ghiringhelli system can manage a diversified range of shafts with different dimensional features and even reduced production batches.

The customer's working cell, integrated into Ghiringhelli's solution, was equipped with a storage unit for pallets with both raw and finished pieces, three handling robots for collecting and storing pieces and a post-process contact measuring unit for strict quality controls.

Technological implementation and results

The centreless grinding machine configured for this specific implementation was a CNC APG-M machine with six axes, equipped with a grinding wheel with 660 mm diameter and 320 mm grinding wheel width, peripheral speed 50 m/s, mounted on a 37 kW spindle. A crucial element for the perfect integration with the automation system and for the best handling of the grinding parameters was the implementation of a CNC Siemens Sinumerik-One with HMI Ghiringhelli's interface. This technological choice represented an additional key factor

with the growing demand for the central role of digitalisation and data in the context of modern automotive production, where the aim is to have data-driven production technologies in which processes can be visualised and optimised continuously. The system is also equipped with modern technologies for advanced diagnostics and maintenance, both ordinary and predictive, thus allowing prospective problems to be anticipated, targeted services to be planned, downtime to be reduced and overall efficiency to be increased. The synergy between the high-precision grinding machine and the advanced automation cell represented a distinctive feature of the solution suggested by Ghiringhelli, thus highlighting the company's ability to offer complete and perfectly integrated systems. The results accomplished through the implementation of the solution supplied by Ghiringhelli fully met the customer's expectations and reached an actual production of 600 pieces/hour, thus exceeding the starting request of 480 pieces/hour. This increase resulted in a significant improvement of machine productivity of about 25 percent. This tangible result proves the effectiveness of Ghiringhelli's integrated approach which is able to provide centreless grinding solutions that not only meet high-precision and production requirements, but also bring considerable added value in terms of efficiency, reliability and optimisation of the overall production process.

The solution, integrated in a robotised cell, was able to reduce man's direct action in the production cycle.

The implemented solution envisaged the implementation of an automatic loading and unloading system designed and manufactured by Ghiringhelli.

The excellence of implementation

Among the key points and the competitive advantages that arise from this specific application case, there is first of all the Ghiringhelli's ability to develop highly customised and integrated solutions, thus combining high-performance grinding machines with cutting-edge automation systems. The inherent flexibility of the system, which is able to manage a varied range of shafts with different dimensions and even reduced production batches, represents a further crucial strong point. The implementation of state-of-the-art CNC technologies, such as the Siemens Sinumerik-One, guarantees high levels of accuracy, repeatability and easy programming, thus significantly contributing to the optimisation of the grinding cycle. Finally, the considerable increase in productivity, at around 25 percent, highlights the clear Return On Investment (ROI) and the added value brought by the Ghiringhelli's solution. The company is the technological reference partner which faces the modern challenges of the automotive sector, where up-to-date machine tools and innovative production solutions are essential to build sustainable, efficient, flexible and resilient companies.

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Gear polish grinding

More efficient and quieter gearboxes

by Dr Maximilian Zimmer

Fig 1: Direct comparison between the ground (left) and the polished ground (right) gear.

With the switch from combustion engines to high-speed electric drives, the automotive industry aims for particularly efficient and quiet transmissions. Once again, precision plays a decisive role in achieving success. Transmissions are one of the drive systems' most inconspicuous parts. The many innovations in transmission design over the last few decades have made vehicle transmissions work ever more efficiently, and, in the best case, they remain completely unnoticed by the vehicles' occupants. The installed gears have ever-lower power losses and ever-better noise excitation behaviour (NVH - Noise, Vibration, Harshness), ensuring lower fuel consumption and improved running smoothness.

In 2012, Reishauer introduced a technology suitable for large-scale production: polish grinding. This process smoothes the surface of the tooth flanks in an additional machining step after the conventional hard fine machining of the gear flanks, without interrupting the machining process.

Conventional hard fine machining with highly productive continuous generating grinding aims to achieve a gear geometry with as little deviation as possible in short cycle times. The subsequent machining step of polish grinding does not alter the ground gear geometry. Polishing only removes the roughness peaks (see Fig. 2). The remaining valley roughness traces serve the purpose of distributing the transmission oil between the meshing gears.

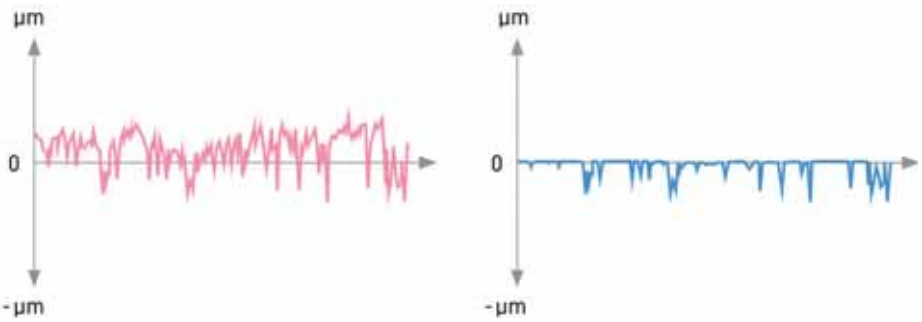

Fig. 2: The surface profile of a standard grinding worm (left) and the smoothed surface profile after polishing (right) with unmachined surface valleys to hold the lubricant. Illustrative representation.

Smoother surfaces equal lower friction

The concept behind polishing is straightforward. Polished tooth flanks reduce friction in the tooth contact, allowing for the use of low-viscosity gear oils. This, in turn, reduces power loss in the gearbox and extends the service life of the gears, a significant technical advancement in gear manufacturing.

Polishing also increases the load-bearing capacity of the tooth flanks. This increases the power density of the gears, allowing for the use of more compact and lighter gears.

The gear grinding process

First introduced by Reishauer in 1945, continuous generating grinding stands as a testament to our industry's commitment to innovation and productivity. It remains the most productive machining process for the hard fine machining of high-precision gears, grinding the tooth flanks using the kinematics of a helical gear pairing.

Current developments in gear hard finishing focus on transferring special functional properties to the tooth flanks during the finishing process. This includes, for example, changing the surface roughness function, influencing the NVH behaviour, or modifying the tooth flank topography.

Reishauer developed the polish grinding as an extension of continuous generating grinding and requires minimal investment. The grinding machine, the clamping tools and the diamond dressing tools remain unchanged. In contrast to conventional gear grinding, polish grinding requires specific and newly developed grinding tools: The threaded grinding wheels are divided into two zones (see Fig. 3). The zone for conventional generating grinding using a roughing and a finishing pass, consists of an aluminium oxide section in a vitrified bond,

whereas the polishing zone uses fine-grit aluminium oxide in an elastic bond. During machining, the machine axis moves the threaded grinding wheel axially to bring the different areas of the grinding wheel into mesh. The functional advantages of polish grinding offset the reduced output due to using an additional zone with one or more additional polishing passes.

Fig. 3: 2-zone threaded grinding wheel.

Significantly tighter requirements for E-Mobility

The Polish grinding of gears developed by Reishauer has quickly established itself in gear manufacturing. In particular, the significantly higher quality requirements for gearboxes used in e-mobility, which have much higher input speeds, have led to the widespread application of the process. With these requirements at the forefront, the advantages of polish-ground gears are particularly effective.

For polished gears, the possible reduction in the gearbox's overall weight due to the higher load-bearing capacity, the reduced power loss due to the lower roughness in the tooth contact and the possible use of low-viscosity gear oils, all significantly contribute to extending the range of electric vehicles.

Due to the high input speeds of e-transmissions, gear noises tend to occur at high frequencies, which people perceive as unpleasant due to the combustion engine's lack of noise masking. Therefore, the noise behaviour of ground gears has become increasingly important. Polished tooth flanks have been shown to reduce noise excitation in the transmission.

The results

The significantly higher quality requirements for gearboxes for use in e-mobility require all components involved in the manufacturing process to be optimally harmonised. With its "Circle of Competence" performance system, Reishauer can harmonise all components, such as grinding machines, clamping devices and grinding and dressing tools, for specific machining tasks. As part of the control system, Reishauer's application engineering supports users in optimising the machining technology, as does the AI-supported Argus monitoring system developed by Reishauer, which, following its introduction into series production, already comprises a data set of over forty million ground gears. This interaction is the key to ensuring the reliable production of high-precision gears.

Author: Dr Maximilian Zimmer, CTO at Reishauer AG, Switzerland

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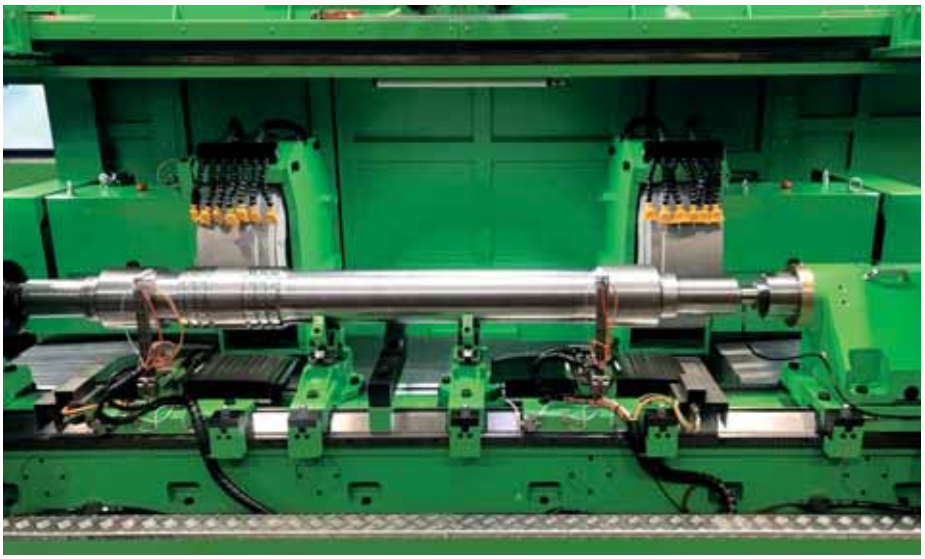
AZ's RU Series

The excellence in railway axles grinding

by Claudio Tacchella

Railway axles are fundamental components of trains as they rigidly connect the two wheels forming what is known as a "mounted wheelset." They play a role of primary importance for the safety and comfort of train travel and their potential failure can cause accidents with serious consequences. Axles are critical mechanical components of significant dimensions that are heavily stressed and during their service, they are subject to various phenomena such as damage caused by accidental impacts with ballast or ice, corrosion due to environmental factors and cyclic fatigue loads. To ensure reliability, precision and efficiency and to maintain the high safety standards required, it is necessary to subject axles to grinding operations, particularly on the extremities called "journals."

In this context, the use of technologically advanced cylindrical grinding machines such as the RU range produced by the Italian company AZ Spa of Thiene (VI), specifically designed for the processing of railway axles, contributes to preserving their integrity and functionality over time. The grinding of railway axles is a necessary process to ensure dimensional precision and surface finish of this critical component. With grinding, it is possible to correct any deformations resulting from manufacturing or operational wear, ensure tight tolerances for coupling with other components and obtain a surface suitable to withstand stress and minimise the onset of cracks.

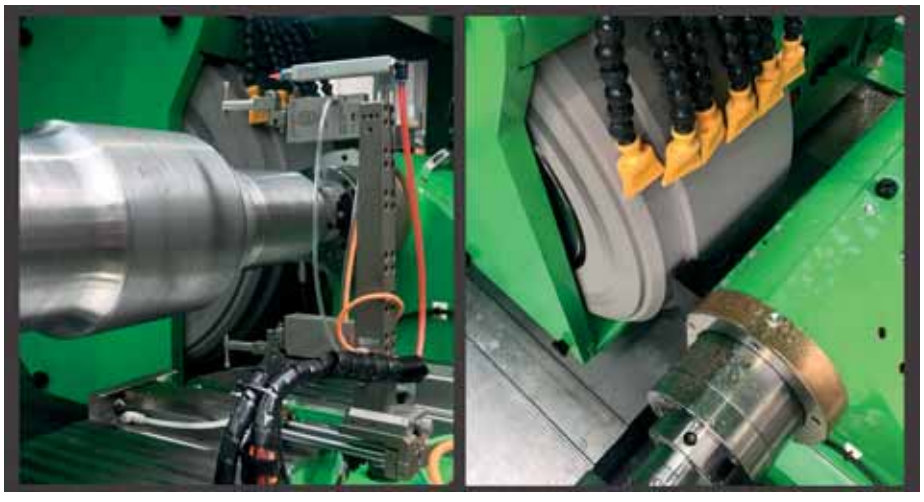


The AZ's RU grinding machine is specifically designed for the processing of railway axles.

Characteristics and main benefits of AZ's RU Line for railway axles

Processing performed with AZ's RU grinding machines offers numerous specific benefits for railway axle grinding, such as high precision and efficiency thanks to the double grinding wheel carriage and high-precision linear motors. With in-process diametral control gauges during machining, impeccable grinding operations are guaranteed with significantly reduced cycle times. The double grinding wheel carriage allows simultaneous operations in a single workpiece setup and the fully automatic wheel balancing system, combined with vibration control, contributes to improving the quality of surface finishing. The grinding wheel has a thickness of 310 mm, further contributing to the reduction of cycle times thanks to a larger contact area and great material removal capacity.

The diamond dressing of the wheel occurs through a double fixed diamond station that allows faster dressing operations or the possibility of using different diamonds for different phases of the process, increasing the flexibility of the system. The automation-ready enclosure simplifies loading/unloading and transport operations, easily integrating into automated production lines, while the rigid monolithic thermally stabilised cast iron base minimises vibrations and deformations, ensuring greater precision and durability of the machine. The RU grinding machine is designed with a centre height of 350 mm, a maximum diameter allowed on the table of 700 mm, a distance between centres of up to 3,000 mm and a maximum allowable weight between centres of 1,500 kg, indicating its capacity to work on railway axles of considerable size and weight.



The AZ's RU Series features in-process gauges systems and wheel dressing.

AZ process control systems

The grinding machine is controlled by a latest-generation CNC system ensuring precise and repeatable execution of work cycles and is integrable with production

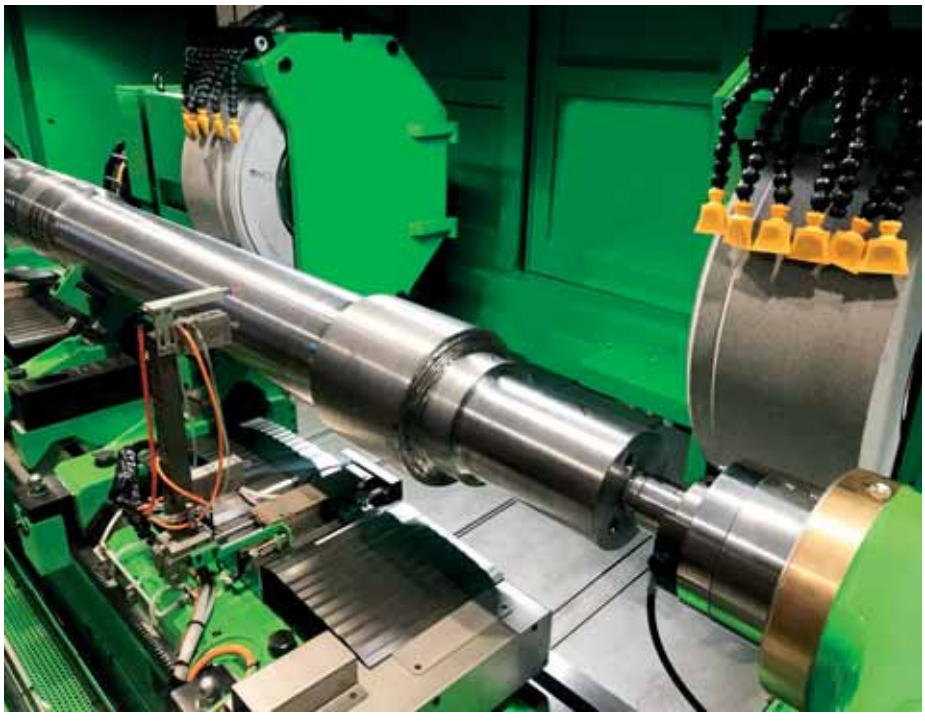
management systems in total Industry 4.0 compatibility. The highly intuitive HMI user interface designed by AZ features customised graphics and cycles, offering operational flexibility and adaptability to the specific needs of the client. The grinding machine has a Multifunctional Modular System for controlling the grinding process for crucial functions such as wheel/workpiece contact control, wheel/diamond contact control with tool wear recovery, collision control, crash control, wheel balancing control with automatic balancer, positioning control of the workpiece and the wheel with probe and In-Process diametral control devices through two devices with a continuous two-point measurement system of the axle diameter. This ensures the achievement of the required tolerances and the reduction of waste.

With these technical characteristics, AZ Spa's RU grinding machines for the machining of railway axles combine a solid mechanical structure with advanced and customisable control and management systems, offering high precision, efficiency, reliability and safety in the grinding process. The simultaneity of operations thanks to the two grinding wheel carriages, linear motors, together with In-Process control systems and automation, lead to a significant reduction in cycle times and an improvement in the quality of the finished product.

"At AZ Spa, we don't just manufacture grinding machines; we design solutions that elevate the entire ecosystem of railway maintenance," says Sarah Pizzolato, marketing director of AZ Spa. "The RU series represents our commitment to precision, efficiency and safety in a sector where technical excellence is fundamental for the performance and reliability of the entire railway system. Our approach combines Italian engineering excellence with cutting-edge digital technologies to create grinding systems that not only meet industry standards but set new benchmarks.

The HMI user interface designed by AZ for the CNC system has customised graphics and cycles.

The machine base consists of a single monolithic piece of thermally stabilised cast iron.



The machine is equipped with a double grinding wheel carriage for simultaneous operations.

Feedback from our global partners confirms that the RU series offers not only exceptional technical performance but also measurable improvements in operational economics and sustainability goals, elements that are increasingly crucial in the current landscape of railway maintenance."

AZ Spa will exhibit at the international EMO fair in Hannover in September where AZ engineers are available to explain all the technical features and provide all information on the new AZ - RU range.

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Master Abrasives leads the way to sustainable manufacturing with Rosa and Favretto machinery

As the UK distributors for Rosa Ermando's cutting-edge Rosa GrindTech and Favretto GrindTech grinding machines, Master Abrasives is proud to introduce two key themes that are central to the future of manufacturing: energy-saving solutions and sustainability. These pillars, combined with Rosa Ermando's 60 years of industry excellence, make its surface grinding machines a standout choice for UK businesses looking to enhance efficiency and reduce their environmental footprint.

Digitalisation, energy and sustainability: Key drivers for the future

In the face of today's complex economic challenges, Davide Lucca, CEO of Rosa Ermando, believes that businesses must leverage digitalisation, energy efficiency and sustainability to gain a competitive edge. "European machine manufacturers have excelled at designing and producing high-quality machinery," he explains. "However, to remain competitive on a global scale, we must go beyond just manufacturing products. We need to focus on integrated solutions that combine innovative machinery, services and processes."

Master Abrasives shares this vision and is excited to bring these innovative solutions to the UK market, highlighting how Rosa and Favretto's technology can drive both operational efficiency and sustainability.

Energy saving: Optimising consumption for a greener future

One of the standout features of Rosa and Favretto machines that were presented at the 34th BI-MU exhibition is its focus on energy saving, an essential consideration for businesses aiming to reduce operational costs and their environmental impact. At the exhibition, Rosa Ermando presented an advanced energy management system that is now available on all Rosa GrindTech and Favretto GrindTech machines. This new feature allows users to measure energy consumption in real-time, providing detailed insights into energy absorption across different components and processing steps.

Davide Lucca explains: "Our new system not only tracks overall energy usage but also enables differentiation by monitoring the energy consumption of specific parts of the machine. The next step is to modulate machine functions based on actual energy requirements, which helps optimise consumption and enhance overall system efficiency."

This real-time energy management system offers manufacturers the opportunity to closely monitor their energy usage, identify areas for improvement and forecast future consumption. The ability to make informed decisions about energy efficiency can significantly reduce costs and contribute to a more sustainable production process.

A vertical production process ensuring uncompromised quality

Rosa Ermando's commitment to excellence extends beyond energy efficiency. With its strong vertical production process, the company ensures the highest quality in every machine it produces. From the initial casting of the machine foundations at a foundry in Romania, in which Rosa Ermando holds a 30 percent stake, to machining, assembly and rigorous testing in the company's Rescaldina plant, Rosa maintains full control over every phase of production.

This vertical approach guarantees exceptional build quality and precision, elements that have earned Rosa and Favretto machines a reputation for durability and performance in the global market.

Master Abrasives: Bringing Rosa and Favretto innovation to the UK market

As the official UK distributor for Rosa and Favretto, Master Abrasives is excited to offer these leading grinding machines to the UK market. With its focus on energy saving, sustainability and quality manufacturing, these machines provide the ideal solution for businesses looking to stay ahead in a rapidly changing manufacturing landscape.

For more information on Rosa and Favretto's grinding machines and to learn how they can help your business optimise production while reducing energy costs, contact Master Abrasives' team: *sales@master-abrasives.co.uk*

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

Rosa GrindTech and Favretto GrindTech grinding machines on display at BI-MU 2024.

ROSA Ermando S.p.A. is a worldwide leading grinding machine manufacturer, founded in 1964 by Eng. Ermando Rosa. Based in Italy, the company designs and builds horizontal-spindle grinding machines for plane surfaces and profiles, grinding machines with universal head for slideways and profiles and creep-feed grinding machines.

BI-MU is one of Italy's major metalworking shows, which ran from October 9th-12th in 2024.

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5 star performance at Smithstown

It's been a very busy time at Smithstown Light Engineering (SLE) with the company investing in additional grinding capacity to meet a further upturn in orders. Advanced Grinding Solutions (AGS) has supplied SLE with multiple new machines.

Pictured after another satisfactory machine acceptance this May at Tschudin's factory, in Grenchen, Switzerland, is Gerard Henn, CEO of Smithstown; Marc Tschudin, CEO of Tschudin AG; Chris Boraston, MD at AGS and engineers from Tschudin's project and automation teams.

Advanced Grinding Solutions has also announced the supply of a further two Rollomatic tool grinding machines, complete with Comat Superfiltration Systems, to SLE after an order placed in February.

They will soon be in action alongside this Tschudin Cube centreless grinding machine, the 5th such machine that AGS has supplied to Smithstown in the last three years, bringing the total order value of grinding machines and associated equipment supplied to SLE by AGS to over £6 million.

Gerard Henn was delighted to accept his 5th Tschudin machine, with the delivery being brought forward to help meet the rise in demand from their customers in the medical industry. He comments that the Tschudin machines, which are being run 24/7 with full automation, have proven to work extremely well and meet quality and output targets.

Smithstown Light Engineering recently celebrated five decades of manufacturing excellence and growth in Shannon, Ireland, since the company was founded in 1974 by Brian King. Starting with a modest team of four skilled toolmakers, today it employs over 260 people at its plants in Shannon and in Rzeszów, Poland. The company has seen record expansion in recent years under the management of Gerard King and Gerard Henn.

The Tschudin machines enable end users to achieve significant productivity gains and the machines' particularly quick and flexible changeover times help minimise machine downtime. What sets the Cube machine apart is its very small size and radical open design for easy access.

The Tschudin Cube uses Tschudin's patented W-axis, which has the workrest blade mounted onto its own CNC axis that allows for parts to be loaded onto it outside of the grinding area, making loading efficient, fast and safe. Traditional centreless grinding machines require parts to be loaded onto a fixed work-rest blade that sits inside the machine between the grinding wheel and control wheel, making loading difficult, more expensive and sometimes unsafe. This also makes changeovers more complex and therefore lengthier. The Tschudin machine overcomes all of these issues and claims to be the world's easiest and fastest centreless grinding machine to set up.

Another huge benefit from Tschudin's CNC workrest blade axis is that it allows multiple parts to move to an initial position for a rough grinding operation to remove a lot of stock material quickly, before automatically being transferred to a second position for a final finish grinding position to enable fine finishes and tolerances to be achieved.

For example, it is possible to load five parts to the work rest blade and have a machine with 10 grinding wheels, five rough wheels and five finishing wheels, with the parts being automatically transferred between the two different sets of wheels.

Linear direct drives on the X, U, and W axes ensure flexibility and productivity with the Cube being specifically developed for the grinding of small components. The Cube can be specified with a 205 mm wide grinding wheel with a 12 kW grinding spindle for grinding up to 63 m/sec and is perfect for the production grinding of parts from 0.1 mm in diameter up to 20 mm in diameter and brings true sub-micron grinding capability for the centreless grinding of a huge variety of parts.

The multiple Tschudin machines at Smithstown Light Engineering are all equipped with FANUC robots for unmanned shift work, whereby specialist medical parts are loaded from pallets, machined and then placed back into pallets.

A high precision grinding machine requires the best possible filtration and the Comat super-filtration systems in use at SLE were specified and supplied by Advanced Grinding Solutions, along with the machines and will keep the Rollomatic and Tschudin grinders in a perfect condition for many years to come.

Comat manufactures super-filtration systems that deliver ≤ 2-3 µm filtration quality and, importantly, do so throughout the entire working cycle whilst minimising lifetime running costs and maintaining maximum coolant consistency. Importantly for end users, the Comat filter systems use its Intelligent Performance Technology that allows them to be remotely monitored in real-time during the manufacturing processes, with customers' filter systems fine-tuned by Comat to ensure that the optimum filtration quality is obtained.

For more information, see:
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Okamoto grinding days 2025

Pioneering grinding technology for key industries

What will the production of the future look like? Where is the journey heading in terms of high-precision grinding in component manufacturing in key industries? What do the latest Okamoto grinding technologies look like for these future grinding and production challenges? The grinding machine manufacturer Okamoto Machine Tool Europe GmbH provided informative answers to these questions during Grinding Days 2025 at the company's European headquarters in Langen, Hesse in Germany. For two days, trade visitors were given exclusive insights into the future of high-precision machining, including live demonstrations and expert lectures.

The grinding machine manufacturer Okamoto has now found a good start to the critical phase of EMO preparation with the Grinding Days 2025. Atsushi Kobayashi was able to welcome a large circle of interested trade visitors to the two days. Day 1 was held in English and day 2 in German and the days included an informative mix of top-class lectures and live demonstrations of the latest Okamoto grinding technology for many different applications.

Thomas Loscher, technical manager at Okamoto says: "Especially in times of difficult conditions in many areas, we as a technology supplier to key industries are challenged to enable our business partners to achieve sustainable but at the same time profitable high-precision production with modern grinding technology. One challenge, for example, is efficient production in times of a shortage of skilled workers. This is where we come in, among other things, with automation solutions. Another approach is our intelligent control technology 'iQ', which enables even unskilled employees to program even complex grinding processes."

One example is the rotary table surface grinding machines of the PRG series, which Okamoto has now equipped with "iQ". With them, manufacturers in various industries have access to grinding technology with which they can quickly and economically achieve the required flatness down to the µm range.

The rotary table grinding machines in gantry design are specially designed for the single-sided machining of e.g. rings, ball bearings and other device components with high demands on surface quality. The round magnetic clamping table moves the workpiece in a circle and the lateral feed or transverse movement is carried out with the appropriate grinding tool. Depending on the programming of the grinding cycles, the PRG can be used to grind under variable table speeds with a constant cutting speed of the grinding tool.

Thanks to the "iQ" control, the user can adjust all grinding positions at any time using the teach-in function via a touch screen with dialogue guidance, even during operation. Programming even complicated grinding processes no longer requires in-depth knowledge of grinding technology. Among other things, this shortens the programming and training times of employees and processes are automated.

The PRG6 rotary table grinding machine with "iQ" control technology.

Another example of a unique grinding technology "performance package" that

Atsushi Kobayashi, managing director of Okamoto Machine Tool Europe GmbH (right) and Thomas Loscher, technical manager at Okamoto (left) were very satisfied with the course of the Okamoto Grinding Days 2025.

component manufacturers can use to make their production more productive and at the same time more sustainable is the Okamoto IGM 15 NCIII-2B Boxer type internal grinder. It is an extremely robust, high-performance internal grinding machine with two spindles that can move independently of each other. In addition to the standard software with a 10-stage grinding program, the software supports cone and contour grinding with parallel 2-axis control.

In addition to the machine exhibition in the Application Centre, other premium technology suppliers and cooperation partners presented themselves: NORITAKE grinding wheels, SAV clamping solutions, MST Cooperation and WBA Aachen.

Atsushi Kobayashi says: "The need for high-performance grinding solutions continues to grow as technology advances. Speed, cost-effectiveness, sustainability and efficiency are the decisive factors in which no component manufacturer can afford to make compromises. This is where grinding machine manufacturers like Okamoto come in, who succeed in continuously optimising their products in order to more than meet the increasing demands in the future. Against this background, our Grinding Days were a great success. We were able to present ourselves as an innovative grinding machine manufacturer and modern service provider with high service quality."

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Kellenberger announces the appointment of Carsten Liske as its new CEO

Kellenberger, a leading global provider of advanced metal-cutting solutions, has announced the appointment of Carsten Liske as its new CEO and member of the board of directors, effective immediately. He will be based in Goldach, Switzerland.

Carsten Liske is a highly experienced executive in the machine tool industry as well as other capital goods sectors. He most recently served as CEO of the Chiron Group in Tuttlingen, Germany. Prior to that, Carsten Liske held global senior leadership positions at Rieter, the leading supplier of short-staple fibre spinning systems, as well as at OC Oerlikon and ABB Group.

"Carsten brings extensive global leadership experience along with a strong background in technologically advanced capital goods businesses. We look forward to partnering with Carsten to continue Kellenberger's growth through unwavering commitment to innovation, precision, and exceptional quality," said Quinn Morgan, chairman of the board of directors of Kellenberger and managing director and co-founder at Centre Lane Partners.

Carsten Liske added: "It is with great pride and deep respect that I step into the role of CEO of such a long-established and globally respected technology company. I look forward to continuing Kellenberger's legacy of providing industry-leading solutions for its customer's most complex machining needs."

Kellenberger is a leading international provider of advanced metal-cutting solutions, offering a wide range of reliable CNC grinding, milling and turning machines. The product portfolio supports industries such as aerospace, agriculture, automotive, construction, consumer goods, defense, energy, medical technology, transportation, and more. The company's technology portfolio includes internal and external cylindrical grinding, jig grinding, specialised grinding solutions and automation, ensuring cutting-edge precision and efficiency for its clients.

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Current trends in the aerospace industry

The civil aviation industry is currently experiencing an upswing with full order books, as is the international supplier industry. At the same time, competition remains fierce with growing demands for efficiency and sustainability. Machine manufacturers such as Fritz Studer AG play a crucial role here.

It was a turning point in the history of mankind when the "Wright Flyer" became the first motorised aircraft to take off on a successfully controlled flight in 1903. Today, more than 120 years after the Wright brothers' maiden flight, over 200,000 flights take place every day to transport passengers and freight around the globe. The aviation industry has become indispensable for the modern global economy, providing millions of jobs and is of immense importance for logistics, tourism and trade. This trend is set to continue, with the industry association IATA forecasting an average annual increase of 3.8 percent in global passenger numbers alone over the next two decades.

This positive trend leads to increasing orders worldwide, for both major aircraft manufacturers and suppliers. This is because things are no longer as they were in the days of the Wright brothers, where they were able to manufacture most of the components for their "Wright Flyer" in their workshop. Modern aircraft cannot be built without the cooperation of highly specialised suppliers who manufacture: engines, landing gear, fuselage components, avionics or cabin interiors for example.

"Every manufacturer today has to become more efficient, both in terms of the product and in production," says Martin Hofmann, sales director for North America and aerospace specialist at Studer. Machine companies such as the Swiss manufacturer of high-precision CNC cylindrical grinding machines play a decisive role for suppliers and Original Equipment Manufacturers (OEMs) because their production systems manufacture crucial components for the aerospace industry. For example, pinion shafts for helicopter transmissions are manufactured on the S31 CNC universal cylindrical grinding machine. Customers benefit from the ability to perform complete machining in a single clamping operation, which enables the tightest form and position

tolerances. This also eliminates the need for re-clamping and unproductive idle times. The machining time is reduced with the use of grinding wheels that match the appropriate surface finish.

Studer has developed SmartJet®, an automatic and more efficient technology for cooling in the grinding process that uses up to 40 percent less coolant and up to 50 percent less energy than conventional methods. WireDress®, an innovative dressing process for metal-bonded CBN and diamond grinding wheels, opens up new possibilities for difficult-to-machine materials that are frequently used in the aerospace industry. The non-contact LaserControl™ measuring system, which measures workpiece dimensions directly in the machine down to the micron range, is also of benefit in the aerospace industry, where component geometry must be precise.

Martin Hofmann also sees the future-proof C.O.R.E. hardware and software architecture and intelligent Studer software with comprehensive digital capabilities as a major advantage of the new generation of Studer cylindrical grinding machines. This includes intuitive operation, process and data visualisation as well as standardised or customised automation systems.

As a machine manufacturer, Studer can look back on a history that is almost as old as modern aviation itself. Less than ten years after the Wright brothers' flight, the

Example image of a control piston – Possible machining task: Face grinding of the control edges on a STUDER S11.

Swiss Fritz Studer made grinding history in 1912 with the founding of his company. "One timeless quality that our aerospace customers in particular appreciate is the very high accuracy and repeatable process reliability of Studer cylindrical grinding machines," Martin Hofmann emphasises. These properties are particularly important here, as the components must not exhibit any deviations, must withstand high forces and are often made of materials that are difficult to machine.

The flexible and process-reliable application possibilities of cylindrical grinding technology are a great advantage here and Studer offers a broad portfolio of high-precision CNC machines for external and internal cylindrical grinding, on which a large number of aerospace components of different sizes, geometries and weights can be manufactured.

Martin Hofmann concludes: "Competition in the aviation industry remains fierce and, as a machine manufacturer, we can make a decisive contribution to our customers' success."

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WireDress® unit.

Joint development between GER and a leader in the manufacture of food packaging machinery

Flow-wrap technology has been a part of our lives for over 100 years. Something as simple as wrapping food with plastic film has set nowadays unprecedented standards in terms of automation and high productivity.

We're talking about machines that thermoweld and cut up to 600 bags per minute, wrapping the muffin or energy bar we eat every day. The cutting blades that do this hard work play a crucial role in the operation of the packaging machine. These blades feature increasingly complex toothed profiles, made from lightweight and exotic steel alloys of high hardness. Mounted on rotating shafts, they spin, cutting the bags at breakneck speed 24/7/365.

GER is proud of the development that it carried out for a world leader in the manufacture of high-production packaging machines. The challenge was met with the design and construction of a controlled 5-axis profile grinding machine. Moreover, thanks to CREEP FEED grinding technology, the grinding time for blank blades has been reduced by two-thirds.

Why don't you bring GER your challenge?

To see the machine in operation visit:
https://vimeo.com/1067347725

GER has been providing grinding solutions since 1952 and are exclusively available through DTS UK. The company has a team that has years of experience with precision machine tools. Whether it is selling, supplying, servicing or providing maintenance to its range of milling machines and lathe machines, you are guaranteed a high-quality level of service no matter which part of the business you come into contact with. It is committed to providing all of its customers with high-quality, top of the range products, as well as ensuring a strong aftercare and maintenance service from its team.

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Curtis Machine Tools (CMT)

Personified–Precision. Performance and Partnership.

The Vector Series: Elevating productivity through engineering excellence

In 2005, a comprehensive market analysis conducted by CMT revealed a crucial insight: more than 90 percent of cylindrical grinding applications involved a grinding length of less than 75 mm. This knowledge led to the development of the Vector series, a family of precision grinding machines specifically designed for high-volume manufacturing environments, particularly in the production of fuel injection components, turbochargers and similarly compact, high-precision parts.

Launched in 2006, the original Vector machine featured a maximum grinding length of 100 mm and an integrated 3-axis automatic loading system. The first Vector was sold to a client in India specialising in diesel fuel injection systems and its success laid the groundwork for a revolutionary product range that has continued to evolve.

Today, the Vector series encompasses a broad spectrum of machines, each engineered to deliver outstanding throughput, minimal downtime and unparalleled consistency. With ongoing refinements in grinding speeds, fluid dynamics, superabrasive materials and automation, the Vector family has become the benchmark for high-performance cylindrical grinding worldwide.

Vector Variants: Tailored solutions for every application

Vector: Compact, efficient and built for performance

The foundational model in the series, the Vector offers a space-efficient footprint and integrated loading system. It is ideal for medium- to high-volume applications and serves as a flexible platform for precision grinding where reliability and cost-effectiveness are paramount.

Vector Twin: Double the productivity, half the downtime

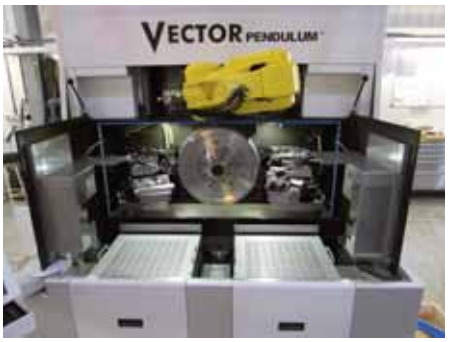
The Vector Twin takes productivity to the next level with a patented dual-spindle configuration housed in an indexing drum. This design enables simultaneous loading/unloading and grinding, effectively eliminating idle time. Spark-to-spark cycle times are reduced to under two seconds, thanks to a rapid 1.2-second indexing time. Additional processes such as gauging, washing, deburring and laser marking can be integrated directly into the loading area, further streamlining the workflow.

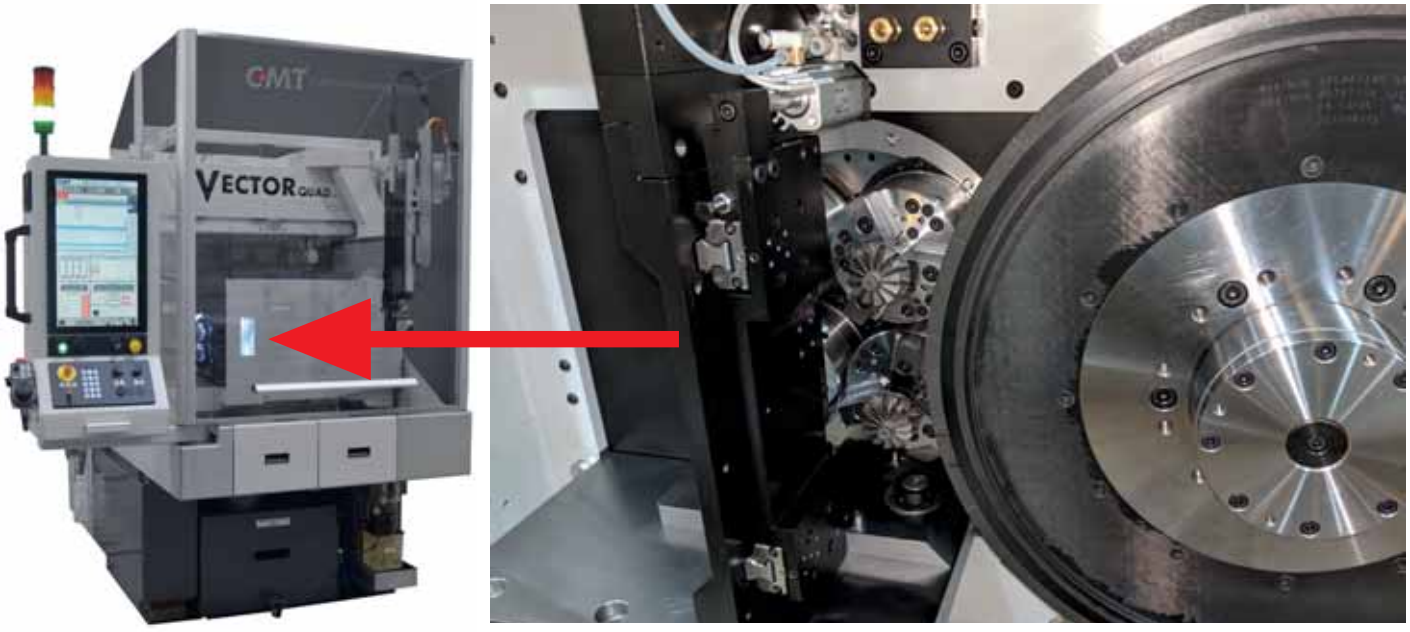
Vector Quad: Simultaneous grinding of dual workpieces

A revolutionary advancement in grinding technology, the Vector Quad incorporates a four-spindle workhead that allows for the concurrent grinding of two parts while simultaneously loading and unloading. This innovative approach not only increases throughput but also enhances consistency, making it ideal for production environments demanding maximum efficiency.

Vector Pendulum: High versatility for complex operations

Designed for ultimate operational flexibility, the Vector Pendulum features dual workheads on either side of a central grinding spindle. This enables separate grinding operations to be conducted concurrently; while one part is being ground, the other is being loaded or unloaded. The machine supports straight and angled approach grinding with a variety of workholding options.





Turbocharger production on the Vector Quad.

Vector Nano: Pushing the limits of precision
Engineered for sub-micron level precision, the Vector Nano is built to serve the most demanding applications in sectors such as medical devices and advanced electronics. With hydrostatic grinding and workhead spindles, liquid cooling and high damping capacity, the Nano offers exceptional thermal stability and accuracy at extremely high cutting speeds.

Vector GFS (Grind From Solid): Eliminating pre-processes
The Vector GFS introduces a unique capability, grinding components directly from standard or hardened bar stock. By removing the need for turning and heat treatment stages, the GFS drastically reduces production time and costs. This is a transformative solution for facilities focused on lean manufacturing and agile production.

Vector Rotary: Precision in spherical profile grinding
Developed for applications requiring complex, blended spherical profiles, the Vector Rotary features a servo-controlled "B" axis mounted to a single spindle workhead. This configuration supports intricate form grinding with high repeatability and minimal setup time.

Vector Concentric: Mastering high-concentricity applications
Ideal for slender shafts and components requiring unmatched concentricity, the Vector Concentric features an innovative part-holding system that rotates the workpiece between rollers against a fixed stop. This configuration allows for the simultaneous grinding of both sides of a gear shaft or similar part, ensuring tight tolerances and exceptional roundness.

Vector Polygon: Interpolated grinding for complex geometries
The Vector Polygon incorporates a programmable 'C' axis that enables dynamic interpolation between grinding axes. This allows for the precise creation of complex geometries and off-axis forms such as polygonal shapes or asymmetric profiles, ideal for custom part production and non-standard designs.

Expanding the Vector Range: Newest innovations

CMT continues to expand the capabilities of the Vector range with recent additions that address even more specialised grinding needs.

Vector Thread/Worm: Threaded component mastery
The Vector Thread/Worm model is engineered for grinding threaded and worm-form components with high efficiency and accuracy. With an adjustable grinding and dressing spindle capable of inclinations from -20° to +20°, it provides optimal flexibility. This machine also integrates a high-speed spindle capable of 140 m/s and allows for simultaneous loading/unloading during the grinding cycle.

Vector XL: Accommodating longer components
With the longest Z-axis of any machine in the Vector series, the Vector XL supports cylindrical components up to 150 mm in length. It retains all the technological benefits of the standard Vector models while enabling the grinding of larger parts without compromising performance or cycle time.

Engineering for excellence Supporting technologies and features

All Vector machines share key design elements aimed at enhancing performance, usability and reliability:

- **Enclosed guarding system:** Fixed guards effectively contain coolant and debris, ensuring clean loading/unloading zones and operator safety.

- **High-speed grinding:** Machines are capable of grinding at speeds up to 140 m/s, ideal for superabrasive applications.

- **High-pressure coolant:** Up to 100 bar coolant pressure ensures superior chip removal, reduced heat generation and improved surface finish.

- **Integrated automation:** 3-axis and custom robotic loading solutions allow for seamless integration into automated production lines.

- **Process integration:** Additional operations such as brushing, gauging, laser marking, and washing can be fully incorporated, transforming each Vector into a complete process cell.

Your partner for precision grinding

Curtis Machine Tools build more than machines, it builds lasting partnerships. Every CMT grinding solution is the product of collaboration, craftsmanship and a deep understanding of its customers' production challenges.

Whether you're looking to scale output, improve part quality, reduce costs, or innovate your production process, CMT is committed to being a trusted extension of your engineering team

It brings precision to every micron, performance to every production cycle and partnership to every customer relationship.

Let it help you shape the future of precision manufacturing.

High-performance turbocharger grinding solution.
Pictured: Two Vector Twin machines operating in tandem to perform precision groove and profile grinding on turbocharger shaft and wheel assemblies. This fully integrated solution includes a custom deburring, washing and measurement system engineered by Curtis Machine Tools, delivering seamless automation and exceptional process control.

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New additions to the VSM family

Two new ACTIROX fibre discs expand the range

The range of high-performance ACTIROX abrasives with geometrically shaped VSM ceramic grain is gaining in strength. The product family is growing, with the addition of two more fibre discs. The AF733 combines the ACTIROX abrasive grain with the ALU-X additional grinding active layer, while the AF979 with its even longer service life is the secret weapon for all hard cases. Customers from the metalworking and processing industries have been benefiting from ACTIROX technology since 2018. Geometrically shaped ceramic abrasive grain continuously produces new sharp cutting edges. A short contact time automatically results in less friction and thus a lower temperature in the grinding zone. Thanks to its faster grinding and the maximum possible stock removal, ACTIROX reduces operating costs and measurably increases productivity. Users therefore achieve greater stock removal than would normally be expected with the indicated grit size and the surface is no rougher.

AF979: For all hard cases

The new ACTIROX AF979 fibre disc in grit size 36+ is the secret weapon for all hard cases. The heavy-duty variant of the proven AF799 offers even more than an extremely long service life. It demonstrates its full potential in difficult applications such as bevelling, deburring and weld seam preparation. With its consistent stock removal rate, it is highly resilient and even burr edges on plasma-cut workpieces present no problem.

AF733: ACTIROX meets ALU-X

Geometrically shaped ACTIROX ceramic grain meets ALU-X additional grinding-active layer. ALU-X was specially developed to meet the requirements of grinding non-ferrous metals. It ensures improved chip removal, fewer tool changes, more stock removal and a grease-free workplace.

In field tests, the AF733 has proven itself to be a specialist when it comes to challenging tasks such as removing mill scale. Maximum stock removal and significantly improved chip removal make this possible. This ensures a longer service life, especially when grinding aluminium and other non-ferrous metals. It is available in grit sizes 36+, 60+ and 80+.

ACTIROX: The quintett for maximum stock removal

With the two new fibre discs AF733 in grit sizes 36+, 60+ and 80+ and AF979 in grit size 36+, the ACTIROX family has now expanded to include five series in total.

AK890Y in grit size 36+ excels in stationary applications such as removing weld seams and burrs using backstand grinders.

AF799 and AF890 fibre discs, with their grit size range of 36+, 60+ and 80+, are ideal for precise rough grinding: For example, for removing weld seams with high-speed angle grinders.

The new ACTIROX fibre discs AF979 and AF733 are available now.

160 years of VSM

VSM employs more than 800 people worldwide. It works to offer its customers the best possible product portfolio with its wide range of abrasive solutions and to make life a little easier for customers each and every day.

The company has an extensive knowledge of abrasives that has been built for over 160 years. Perfect surface quality, high stock removal, long service life and all this while maintaining consistently outstanding performance. These distinctive features of VSM abrasives have impressed its customers all over the world since 1864. As the largest national association for grinding technology in Europe, the Association of German Abrasive Manufacturers (VDS) represents the interests of VSM as a member of the German abrasives industry.

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Quality over the entire lifetime

Non-Woven abrasives by Tyrolit

Long lifetimes, flawless surfaces and maximum efficiency decide over the profitability of your surface treatment operations. Tyrolit Non-Woven Abrasives are high performance grinding and polishing solutions designed for versatile applications. Perfect for both professional and industrial use, these tools combine advanced materials with an exceptional flexibility.

Tyrolit Non-Woven Abrasives feature a 3D web of fibres impregnated with abrasive grains. Ideal for grinding, polishing and finishing tasks, they provide excellent stock removal and individual benefits depending on the product.

In many industries, the demand for high-quality abrasives for various machines is increasing due to rising requirements concerning surface quality and time efficiency. Compared to competitor products, Tyrolit Non-Woven abrasives offer the longest tool life. For some product groups, such as SCM products, the difference can be up to 55 percent longer lifetimes. This is primarily due to the open structure, which prevents clogging and the high-quality materials used for both the backing and abrasive layer.

In addition to the longer lifetime of the products, there are other key benefits that set Tyrolit apart from competitors on the market. While other products often offer a higher initial stock removal, their efficiency drops significantly over time. This is not the case with the Tyrolit Non-Woven product range. The products ensure consistently high removal rates and an impeccable surface quality throughout their entire lifetime.

The compact wheel range stands for high tear-resistance and consistent finishing quality. For deburring workpieces and finishing various materials without any alteration of the surface geometry, customers use the convolute wheels. The unitised wheels on the other hand are perfect for cleaning, blending, finishing and for machining welding seams.

Tyrolit Non-Woven assortment contains discs and wheels as well as rolls, rollers and handpads. The material features strong ventilation, flexibility, exceptional ease-of-use and clogging is reduced to a minimum. Available in various hardness grades, the non-woven products by Tyrolit can be used in diverse applications, from light deburring and cleaning to finishing.

Tyrolit UK Ltd
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Lapport Schleiftechnik

Manufacturer of premium grinding wheels and stones

Lapport Schleiftechnik GmbH, based in Enkenbach- Alsenborn, Germany, was started in 1873 by Peter Lapport for machining and distribution of whetstones. The company moving to its existing facility in Enkenbach-Alsenborn in 1910.

Over the years, Lapport has grown into a premium manufacturer of conventional bonded abrasive products and in 2009 were acquired by Günter Effgen GmbH to complement its range of superabrasive products.

Lapport is one of the few remaining independent manufacturers of conventional bonded abrasive products in Germany and is known for its premium, high quality and sustainable products used across many industries including: Aerospace, Automotive, Oil & Gas, OEM, Tooling, Saw Sharpening, Food, Pharmaceutical, Agricultural, Print (Roll) and Distribution.

Lapport is proud to be one of the founder members of oSa ensuring the manufacture and use of safe abrasive products across all industries.

Today, Lapport as part of the Günter Effgen GmbH group can offer a range of conventional and superabrasive product offering precision, innovation and flexibility.

Lapport manufacture grinding wheels, grinding segments, honing stones, whetstones, sharpening and dressing stones.

It uses a range of Aluminium Oxide, Silicon Carbide and the premium Sintered Aluminium Oxide (HPG-High Performance Grinding) grains with grit sizes as fine as 1,200 grit and wheel diameters up to 1,600 mm.

Lapport offer a full and diverse range of grinding and sharpening products, including milling grinding wheels for the food industry and flexible blending stones used by mould and tool, aerospace and medical end users.

Since April 2024, TSH Engineering Services Ltd, with over 35 years experience in abrasive applications, have been agents for Effgen Lapport in the United Kingdom.

If you are looking for improved quality, performance and cost savings within your abrasives operations, contact TSH Engineering Services.

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Get better results with Norton anti-loading technologies

Working on any substrate, abrasives can easily become clogged with the material being removed, including metal and wood dust or paint and other coatings. Clogged abrasives interfere with performance and can cause damage to a workpiece. A worldwide leader in abrasives, Norton/Saint-Gobain has developed specific technologies to prevent loading so you can get the finish you want.

Norton uses a proprietary stearate coating called No-Fil that is manufactured in-house and applied to Norton paper-backed abrasive products. Controlling the entire production process ensures the highest quality standards are met with every run. So, no matter where in the world you purchase or use your Norton abrasive, you will get the same high level of performance you need. Plus, its uniquely formulated stearate is environmentally friendly in both how it is produced and how it can be discarded after use.

A stearate coating on an abrasive works as a lubricant, reducing friction and preventing clogging or loading on the abrasive surface. This keeps the abrasive working more effectively over longer work periods and helps to protect the surface of the workpiece. The technology is crucial in such applications as metalworking, automotive/transportation finishing and woodworking. Norton's No-Fil technology is available on paper, mesh, or film backings to give you the greatest flexibility in finding the right product for your needs. One of the most common ways that Norton coated abrasive paper products are used is by attaching our discs on an orbital sander. Most of these sanders have basic, built-in dust extraction or can be attached to a vacuum that pulls debris into an attached bag. This not only keeps debris away from the workpiece surface, it also prevents the operator from inhaling the dust and ground particles. However, you still need to pull dust from between the disc and the workpiece.

The team has designed and engineered the Multi-Air Cyclonic anti-clogging design.

Discs are laser-cut with specifically shaped perforations that filter the dust away from the surface and into the vacuum system.

The perforations are cut in a unique, patented pattern engineered to provide the maximum abrasive performance. Unlike a die-punched hole which causes hole deformation where dust can collect and thus reduce cutting action and the ability to extract dust, the precision laser-cut holes have clean edges that don't fray or diminish the performance of the abrasive.

Norton
Saint-Gobain Abrasives
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www.nortonabrasives.com

Mirka Iridium Soft flexible sanding pads

Struggling to achieve perfect finishes on curved surfaces? Tired of clogged abrasives slowing you down? Tackle these problems with the new Mirka Iridium™ Soft, the new go-to abrasive for those looking to up their game in dust-free dry sanding for AOEM and collision repair.

A refined abrasive for AOEM and collision repair

The goal was clear: to offer a high-performing abrasive for collision repair and AOEM. One of the challenges was creating an abrasive flexible enough to closely follow the contours of car bodies, ensuring even sanding. By utilising a three-part construction with a base of flexible foam, Mirka has developed an abrasive that outperforms all previous options for the dry sanding of automotive finishes.

Dry sanding up to 2,000 grit

Iridium Soft offers the best of both worlds with fast, dust-free dry sanding and fine precision grit. It has a stearate that acts like a lubricant, eliminating the need for water. The advantages of dry sanding are that it is fast, allows you to inspect the surface while sanding and makes cleanup easy. In contrast, wet sanding benefits from the water acting as a lubricant but requires wiping and cleaning the surface to examine the results.

Iridium Soft's abrasive surface features long-lasting aluminium oxide grains. Coupled with Mirka's Multifit™ hole configuration, this gives you efficient sanding with minimal clogging, pilling and swirl marks.

The grip backing on Iridium Soft ensures the abrasive remains securely in place during sanding while allowing for effortless removal when needed. Designed to handle intricate curves, expansive surfaces and precision finishes with ease, Iridium Soft delivers unmatched endurance, comfort, performance and versatility making it the ultimate solution for professionals. Achieve a faster workflow, a cleaner workspace and flawless dust extraction with every use.

Key features:

Versatility: Efficient dry sanding in eight grits, from 400 to 2,000 for a wide range of sanding applications.

Flexible foam backing: Soft foam base conforms effortlessly to curves and contours for smooth, even sanding.

Clog-resistant: Mirka's Multifit dust extraction pattern prevents clogging and ensures a cleaner workspace.

Long lifetime: Precision coating and specialised grains optimise performance, ensuring a long lifetime on demanding surfaces.

Comfort: Ease of handling and ergonomic operation reduces user fatigue during both manual and machine sanding.

Smooth surface preparation: Fine scratch pattern ensures that the surface is evenly prepared for the next step, such as priming, painting, or polishing. It prevents visible scratches after finishing.

Two-in-one product: Designed for both hand and machine sanding, ensuring gentle and controlled abrasion to prevent breakthrough of the coating.

The supercar of abrasives

Mirka Iridium Soft delivers precise, clean and efficient dry sanding with exceptional surface quality and control on every pass. This premium foam abrasive pad is already the top abrasive choice for exclusive car manufacturers, OEMs and repair shops across the world.

Designed to handle intricate curves and detailed finishes with ease, Iridium Soft delivers unmatched results, making it the ultimate solution for professionals.

Designed for bodywork

By utilising a three-part design with a backing of flexible foam, Mirka has created an abrasive that surpasses previous options for the dry sanding of automotive finishes.

Sanding cars and their components requires significant precision to achieve a smooth and even finish. With Iridium Soft you can feel the foam abrasive follow every line, curve and angle of the surface. This flexibility of the foam sanding disc is integral to Iridium Soft's longevity and performance, distinguishing it from traditional abrasives.

Find the right abrasive for your sander

Iridium is a premium abrasive for universal sanding. Perfected for speed and efficiency, it prevents clogging and reduces pilling. It practically repels dust and lifetime is increased due to the grains staying sharp for longer.

With Iridium you can achieve dustless sanding, thanks to the optimised multihole patterns for discs and strips. Iridium delivers amazing results on both soft and hard surfaces, making it the ideal abrasive choice for professionals in any industry.

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10 years of precision

Klingspor celebrates anniversary of diamond tool production

Abrasives manufacturer Klingspor is looking forward to a significant anniversary this year: Ten years ago, the company established its own production facility for diamond tools in Lviv, Ukraine. This strategic decision marked a milestone in Klingspor's corporate history as well as a testament to its claim of operating an in-house production that only manufactures products of the highest quality.

Lviv as an ideal location

The pick of Lviv as a production site was no accident. Aside from offering excellent logistical connections and a pool of highly qualified specialists, Ukraine offered ideal conditions for Klingspor's dedication to satisfying the highest quality standards. Despite the challenges in recent years, the location has proven to be robust and future-proof, impressively underscoring its strong partnership with the region and the local employees.

Diamond tools that keep raising the bar

The diamond tools manufactured in Lviv, especially the diamond cutting blades in a variety of dimensions, are characterised by exceptional quality and durability. State-of-the-art manufacturing technologies, strict quality controls and innovative new products springing from research & development in Germany guarantee consistently high performance, resilience and precision. "Our diamond tools set standards in the industry. They offer our customers around the globe a superior cutting performance and a significantly longer service life, a clear competitive edge over other manufacturers," explains Dirk Köpsel, director for sales and marketing at Klingspor.

Investments in the future

The tenth anniversary serves Klingspor as an occasion not only to look back on the successes of the past, but to look forward to the future. The company plans to continue investing in innovative technologies and the development of the Lviv site in a bid to further augment its position in the market for diamond tools.

With this anniversary, Klingspor is sending a strong signal in terms of quality, innovation and the value of long-term partnerships to customers and employees alike.

High-performance tools for maximum performance

From professionals for professionals. Klingspor carries more than 50,000 tools for all your grinding, cutting, milling, polishing and stock removal needs. The breadth and depth of its product range offers the right tool for your specific requirements, often even with a variety of different options.

Klingspor Abrasives Ltd Tel: 01909 712310 Email: sales@klingspor.co.uk www.klingspor.co.uk

Cost-effective and innovative abrasive products

Kayson Green Ltd is a leading distributor of abrasive products. With over 45 years' experience of servicing and concentrating on a cross-section of businesses across the British and Irish manufacturing sectors, it offers proven advice in the specification of cost-effective and innovative abrasive products. Combine this with its access to world-class expertise, it's easy to see why Kayson Green is often a preferred choice for industrial firms seeking optimal grinding solutions.

As a partly owned subsidiary of the Lukas Erzett group since 1987, Kayson Green has long been at the forefront of abrasive manufacturing and product specification. The company has invested heavily in the expansion of its warehousing and logistics and continues to expand its links with world-renowned abrasive manufacturers to bring its customers the most cost-effective and innovative grinding solutions.

The company believes passionately in close, open and reciprocal working relationships with manufacturing partners. Within the last decade, it introduced Cafro, Diamond and CBN products and Biffignandi, Precision Polishing, micro finishing and lapping film. These partnerships further enhanced our product portfolio. It aims to develop optimal grinding solutions and provide industry-leading technical support.

Partners

The European manufacturers it represents are not just suppliers, they are valued partners of Kayson Green. These partners share its belief in the benefits of innovation, customer focus and long-standing, close, open and reciprocal working relationships. Through these affiliations, Kayson Green

can offer its valued customers the most cost-effective and innovative abrasive products, underpinned by leading technical support, customer service and delivery.

Customer focus

It appreciates the diversity of its industrial customer base and recognises that no two customers have the same needs. The company prides itself in providing a tailored service to all of its valued customers. Kayson Green supplies directly to end users and to a selected network of independent distributors. Its customers span numerous manufacturing industries. These include the aerospace, automotive, medical, fabrication, foundry and steel industries.

Where a customer utilises the services of a site-integrator, while developing solutions with our customers' application engineers, it also works closely with the site-integrator to ensure that effective and efficient logistics and stock management prevent any disruption to supplies. Kayson Green also ensures that both the site-integrator and end user are kept abreast of any technical innovations relevant to their industry.

Service

To service its customer base, in addition to its sales team located at its Colchester head office, it employs technical sales representatives covering the length and breadth of the UK and Ireland. For highly specialised, industry-specific applications, it can call upon the technical expertise of application engineers from its partners. These application engineers are highly qualified and experienced in specific industrial grinding applications, such as bearings, rolls for steel mills, gears etc.

Warehouse

Its purpose-built 4,500+ sq ft warehouse is adjacent to its head office. It houses an extensive range of abrasive products. Orders placed for stock items are packed and shipped to arrive at customers within 24-48 hours. In addition, it also has access to thousands of stock items held by its European partners. Using modern logistics, the products can be shipped to its warehouse or directly to the customer within two-to-three working days.

Bespoke quality products

Kayson Green strives to supply the optimum bespoke quality products, thus many of its products and qualities are not found in its literature or catalogues. It achieves this by working in close collaboration with customers, identifying areas requiring improvement. This could include surface finish, geometry, grinding cycle etc. Once identified, it liaises with its partners to develop a prototype solution for testing. This philosophy is used for many types of products, ranging from miniature mounted points for the aerospace industry to 1,000 mm grinding wheels used in the production of steel and paper rolls.

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Weiler Abrasives introduces new Zirconia Alumina resin fibre discs for increased performance

Discs provide a fast cut, long life solution for challenging grinding applications

Weiler Abrasives, a leading provider of abrasives and power brushes for surface conditioning, has announced the expansion of its line of resin fibre discs. The new Zirconia Alumina resin fibre discs provide maximum performance, a fast cut and long life for grinding tough metals like steel, stainless steel, structural steel, cast iron and Inconel.

"The new Zirc discs provide superior performance in even the most demanding grinding applications," says Uroš Filipič, product manager for Weiler Abrasives. "These discs leverage a unique blend of self-sharpening zirconia alumina grains to deliver a fast cut rate and exceptional consistency."

The disc's design maximises grain retention, which extends disc life and reduces changeovers to save users time and money. The self-sharpening zirconia alumina grains hold up under high temperatures and extreme pressure, while active fillers dissipate heat during high-pressure grinding. This results in cool grinding that reduces rework and protects high-value parts. In addition, a heavy-duty vulcanised fibre backing stands up to demanding jobs.

Also, the contaminant-free formula provides a worry-free solution for stainless steel. These discs are often used in shipbuilding and metal fabrication, for applications such as heavy stock removal, edge chamfering, weld blending, grinding, finishing and surface preparation.

The addition of Zirconia Alumina adds more performance options to Weiler Abrasives' resin fibre disc offerings. The lineup also includes aluminum oxide resin fibre discs, designed to deliver a fast grinding solution for everyday use. Durable aluminum oxide grains provide a smooth cut rate and consistent performance on a variety of materials, including soft alloys, low-alloy steels and non-ferrous metals.

These discs are good for applications such as weld blending, grinding, sanding, finishing and surface preparation.

Learn more about the resin fibre disc lineup from Weiler Abrasives and the new Zirconia Alumina options at: ***https://emea.weilerabrasives.com/catalog/products/coated-abrasives/resin-fiber-discs.***

WEILER Abrasives d.o.o
Email: info.slovenia@weilerabrasives.com
https://emea.weilerabrasives.com/

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

The book is now on stock in the UK at:

Unit 16, Stanley Court
Waterwells Business Park
Gloucester, GL2 2A
Tel: +44 (0)1452 725191

Piston rod lapping and polishing

This case study details the procedure for matching a piston rod against a cup and subsequently aligning the lapped piston rod with an internal brass holder.

Precision lapping is a critical process in achieving high levels of surface finish and dimensional accuracy in engineering components. Utilising the Kemet Kemisphere 2 machine with custom tooling, silicon carbide paste and OS lubricating fluid results in superior surface finish and enhanced component fitment. The systematic approach guarantees repeatability and high-quality outcomes in precision engineering applications.

Equipment and materials

The following equipment and materials were used for the precision lapping process:

Kemet Kemisphere 2: Spherical lapping machine.

Custom tooling: Designed for component handling and alignment.

Silicon carbide paste, 9.3 micron: Abrasive compound for controlled material removal.

OS lubricating fluid: Provides lubrication during lapping.

CO-42 cleaning fluid: Used for final cleaning and removal of residues.

Process breakdown

Cup stage

The piston rod was inserted into a custom holder and securely tightened before placing the cup in the three-jaw chuck of the lapping machine. A 9.3-micron silicon carbide paste was evenly applied around the piston rod end. The custom holder was then slotted into the locating arbor to ensure precise positioning. To enhance lubrication, a controlled spray of OS lubricating fluid was added to the cup. Finally, the programmed lapping cycle was executed using pre-set machine parameters to achieve the desired surface finish and dimensional accuracy.

Brass holder stage

The piston rod was inserted through the brass cup and into the custom holder, then secured in place. A 9.3-micron silicon carbide paste was applied to the bottom of the piston rod to facilitate material removal. The custom holder was aligned with the slots on the arbor and a jubilee clip was attached to hold the piston in place at the top of the cup. The brass holder was then positioned and secured in the three-jaw chuck. A measured spray of OS lubricating fluid was applied to the top of the holder to minimise friction and wear. Finally, the machine was programmed and run according to predefined settings to ensure a uniform lapping process.

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

Kemet International Ltd
Tel: 01622 755287
www.kemet.co.uk

For the most demanding surface finishing needs

Engis is a leader in the design and manufacture of complete polishing and lapping systems that offer the highest quality finished components, processed in the quickest cycle times while minimising manufacturing costs. But the machine is just one part of the process, what really sets Engis apart from the competition is its unique ability to provide process development and customer support that is second to none.

Its systems are suitable for processing a vast range of materials: metals, ceramics, glass, semiconductor substrates, plastics and other advanced materials. It has developed solutions for many industries, improving quality, efficiency and cost.

FastLap polishing & lapping machines

The FastLap series of polishing & lapping machines are built for versatility and speed. These machines can be customised from a basic tabletop model to a large floor-standing model with advanced process controls. Built with heavy duty spindle bearings, they are designed to withstand the high loads necessary for diamond processing of hard materials.

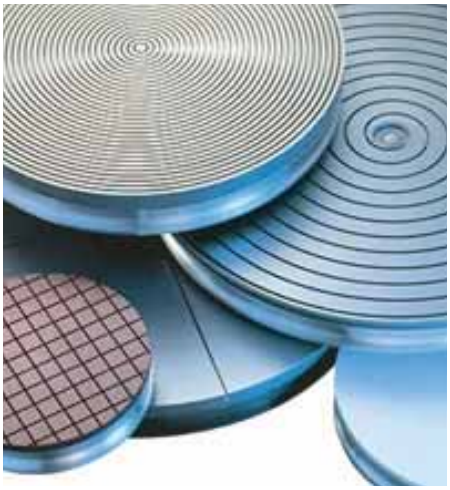
Ultra-precision polishing & lapping

Maintaining a flat and evenly textured composite lap plate is critical for stable lapping performance. Traditionally this is achieved with a diamond plated conditioning ring, requiring a high level of operator experience and skill. To improve this process, Engis has engineered a solution that helps take the 'art' out of lapping, the facing/grooving device.

Using a diamond tool bit, this innovative device removes the top layer of the composite plate, making it flat to within microns. A groove pattern can be machined in a second pass. It is even possible to create a tapered plate to produce slightly convex/concave surfaces. When the device is not in use, it retracts out of the work zone.

With predictable plate surface topography, groove pattern and controlled velocity and pressure, the entire lapping process becomes easier to manage and your results are more repeatable. Also, this unit is operator-friendly and eliminates the strain of lifting conditioning rings onto the plate.

The facing/grooving device is an option that can be added to most Hyprez lapping machines at the time the machine is ordered.



Hyprez lap plates

Engis manufactures a complete line of lap plates, including metal composite, solid metal and fixed abrasive options. Its applications experts can recommend the best lap plate for your application.

An efficient lapping operation requires the selection of a proper lap plate. This selection is guided by the process objective, stock removal, fine finish, the material being lapped and the diamond size/type used in the lapping slurry.

A composite lap plate is comprised of metal or ceramic particles in a resin matrix, allowing for efficient charging of diamond abrasive particles into the plate. This charged composite plate can significantly reduce process times and achieve a finer surface finish, often in a single step. A composite plate is also well suited for a facing device, taking the guess work out of flatness and texture control.

Hyprez precision lapping and polishing slurries

As part of its complete solution, Engis manufactures a complete line of precision-graded diamond slurries, colloidal silica polishing slurries and aluminum oxide powder with lapping oil for achieving flatness control and excellent surface finish on a wide variety of materials.

Hyprez consumable formulas are the result of Engis' complete understanding of diamond and its application in the lapping process. Its expertise on how to mill, shape and grade diamond of various types and friability is unmatched. Coupled with this experience is its knowledge of chemistry, compounding techniques, carrier formulations and concentrations which provide superior efficiencies and results. Its ISO9001 certified quality system has made Hyprez a trusted name in diamond consumable products throughout the world.

Engis Corporation is a third-generation privately-owned US-based manufacturer of high-performance super abrasive lapping, grinding, honing and polishing products and related machinery and accessories. The company began in 1938, with offices in the US and UK, as a trading company for precision measuring equipment and industrial machinery. The company entered into the abrasives market in the 1940s with the development of its Hyprez Diamond Compounds for precise polishing of critical components for defence and aviation industries.

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KADIA launches new U line

High performance honing for ultimate precision and productivity

KADIA U line: Compact on the outside, cutting-edge technology on the inside: The new generation of the universal honing machine combines state-of-the-art machine design with powerful, high-performance technology at its core.

With the third generation of its successful U line, KADIA has introduced a state-of-the-art honing machine that redefines standards in precision, productivity and serviceability while maintaining full versatility. Developed from the ground up, the new U line fully embodies KADIA's brand promise: High performance honing, highest quality and maximum productivity.

"The U line combines what has always been at the core of KADIA: ultimate machining accuracy and maximum cost-efficiency through short cycle times, high machine availability and outstanding process reliability," explains Henning Klein, managing director of KADIA.

The U line is designed as a compact rotary indexing machine with six stations: two honing stations for rough and finish honing, two measuring stations, a loading/unloading station and an optional integrated brush-deburring station. Key maintenance components such as pumps, pneumatic systems and lubrication units are centralised and easily accessible in a dedicated service compartment.

Based on the experience gained from over 50 delivered systems from previous U line generations, the new machine lives up to its name: the "U" stands for "Universal". It covers a wide machining range from 1.5 mm to 40 mm bore diameters, making it ideal for both small parts like gears and larger components such as those used in the hydraulics sector.

A standout feature of the new U line is its significantly enlarged working area. The diameter of the rotary table has been increased by 30 percent, resulting in 60 percent more table surface. This enables the use of larger fixtures and significantly expands the machine's application range. Transport speed of the rotary table automatically adjusts to the workpiece weight, minimising mechanical wear and extending the drive's service life.

While the machine's footprint remains a compact 4.5 m², its mass has been increased by 20 percent, improving vibration damping. This allows the new highly dynamic honing spindles to operate more effectively, a key factor in reducing cycle times and maintaining process stability even at high material removal volumes.

Ergonomic operation and efficient setup

User comfort and fast changeovers were top priorities in the development of the new U line. A walk-in side niche allows rear access to the work area for the first time, ideal for quick gauge changes at the rear measuring station. The front-loading door has been widened by 10 percent, improving manual part loading and enhancing overall workstation ergonomics.

"Today, our customers expect not only precision machines but also smart operating concepts that directly contribute to overall equipment effectiveness," emphasises Henning Klein. "With the new U line, we significantly reduce setup times and boost machine availability."

Next-gen honing spindle LH2x

At the heart of the new U line is the newly developed LH2x honing spindle, the next evolutionary step in the successful "Lean Highspeed" series. Featuring three integrated direct drives for oscillation, rotation and tool expansion, the spindle introduces a completely new concept. It delivers higher cutting speeds, broader

More power, more precision, more potential: The new LH2x honing spindle with three direct drives and four patents is driving the future of honing.

versatility and easier maintenance compared to its predecessor. Four new patents underline the innovative strength of this development.

Smart control for demanding processes

Together with the LH2x spindle, the HMC100 control unit forms the technological backbone of the U line. It enables scanning of the honed bore in axial direction, significantly improving in-process measurement quality. Even complex geometries can be analysed precisely and consistently, a major advantage for high-end, reliable honing processes. The HMC100 also supports multi-stage honing within a single cycle, with each stage individually programmable, e.g., in terms of cutting speed. This improves both cycle times and bore quality. A new feature, form honing, allows precise machining of tapered or barrel-shaped bores.

Further optimisation of measuring and deburring stations

The measuring stations have also been technologically refined. Thanks to a rotary drive, workpieces can be inserted in any orientation, while the measuring axis automatically detects the correct position. The new measuring axis design also allows the use of shorter probes, enabling faster and more precise measurement reducing cycle time and enhancing quality.

In the deburring unit, a new motor with 40 percent higher rotational speed significantly improves performance, especially for small-diameter bores. The automatic brush changer has been redesigned for higher robustness and now features new magazines that hold up to eleven spare brushes per diameter. This further automates the deburring process and minimises downtime.

Ready for any production environment

Whether for mixed-model production or high-volume manufacturing, manual or automated loading, the U line is the universal honing machine for highest quality and maximum productivity in bore finishing.

The new U line brings together over a decade of U line expertise with KADIA's decades-long honing expertise and enhances it with innovative technical advancements. It is a well-conceived, high-performance solution for manufacturers who demand precision, flexibility and peak economic efficiency.

Watch the video on KADIA's english YouTube channel:
https://www.youtube.com/watch?v=_eti23Ewl1E

KADIA Produktion GmbH + Co. Tel: 0049 7022 60060 www.kadia.de

HMC100 control with scanned bore image display: Intelligent process control, multi-stage honing, and precise form honing, delivering highest quality directly on the machine.

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?

1) 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 it has invested heavily in research and development, designing its own honing tools and machines over the years. As a result, it can deliver exceptional results, even when handling the most challenging of projects.

2) 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 inhouse 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, CNC controls and automation systems are developing rapidly at the moment.

Hone-All has state-of-the-art honing equipment on site, including modern Computer Numerical Control (CNC) honing machinery, 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.

When you use Hone-All, you won't need to worry about the costs involved in hiring and training specialist engineers to carry out your honing, as you'll have an entire team of specialists to hand.

3) Increased productivity

If you don't have the right employees, machines, or tools to carry out precision honing to tight deadlines, the efficiency of your production line will suffer. 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.

Hone-All specialise in manufacturing high precision, tubular components by utilising the latest in deep hole boring, gun drilling, turning and honing technology.

With 9100, 9001 and a range of customer approvals including Rolls Royce, BAE, and Collins, it is a leader in its field.

It provides a wide variety of industries with a complete service from sourcing raw materials to producing finished components up to three metres long.

All procedures are carried out within its own facilities ensuring it continuously improves controls over cost, quality and lead times giving you the most competitive rates and a faster, more efficient service.

The Hone-All culture is one of a family business with the emphasis on approach-ability, teamwork, communication and co-operation, with an open policy on management and business strategy that invites the support of every member of the Hone-All team.

Hone-All Precision Ltd
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Beyond the surface

Mastering honing with delapena in-depth training

For decades, nestled in the UK's engineering heartland, delapena has been synonymous with precision honing technology. Its journey, rooted in a vision to redefine industry standards, has seen it evolve from pioneering honing machinery to crafting advanced automated systems. This unwavering commitment to quality and a profound understanding of surface finishing intricacies have established delapena as a trusted partner across diverse sectors, including aerospace, automotive and hydraulics. This rich heritage forms the bedrock of delapena's forward-thinking approach to honing training.

Recognising the critical need to cultivate future expertise, delapena emphasises training the next generation of engineers. This investment is not merely about replacing an experienced workforce, it is about ensuring continuous innovation by effectively transferring invaluable knowledge. In an era of rapid technological advancement, a highly skilled engineering workforce is indispensable for driving breakthroughs. By providing robust education and practical experience, delapena empowers these future engineers to conquer the complex honing challenges of tomorrow.

In today's fiercely competitive landscape, achieving superior surface finishes and dimensional accuracy is paramount. Effective honing is no longer a superficial step but a crucial process directly influencing component performance, longevity and overall quality. Acknowledging this, delapena provides bespoke honing training packages meticulously tailored to the unique needs and operational contexts of individual businesses, equipping teams with the skills and understanding essential to maximise their honing operations.

Delapena's training seamlessly integrates comprehensive theory with practical application, always customised to client needs. Key areas covered include the fundamentals of honing, encompassing material removal, abrasives and machine types, alongside its inherent advantages. Participants receive thorough guidance on abrasive selection, ensuring optimal choices for diverse materials and applications. Machine operation and maintenance training emphasises safe, efficient utilisation and preventative care for extended equipment lifespan. In addition, the training delves into process optimisation and troubleshooting techniques to achieve stringent tolerances and resolve common issues, thereby minimising downtime.

By prioritising the specific needs of each business, delapena's training empowers teams with the knowledge and skills vital for maximising their honing operations and contributing significantly to overall manufacturing success.

Ready to elevate your competitive edge? Contact delapena at sales@delapena.co.uk to discuss your specific training needs and allow it to craft a bespoke honing training package that will sharpen your team's skills and amplify your company's performance.

delapena Tel: 01242 516341
Email: sales@delapena.co.uk www.delapena.co.uk

Sunnen highlights advanced SV Systems for high-production honing

Precision-engineered vertical honing systems deliver unmatched precision, automation integration and global compliance for industrial applications

Sunnen Products Company, a leader in high-precision, bore finishing, highlights its advanced SV Systems designed for high-production environments. These vertical honing systems deliver exceptional performance, flexibility and efficiency for a wide range of industrial applications. Systems can be tailored to the application with multiple columns, air gauging, brushing and many other options.

The SV Systems are engineered to handle diverse jobs with a powerful servo spindle motor, providing the muscle necessary for efficient honing operations. Advanced servo stroke control enables precise honing, including short stroking and dwelling capabilities, resulting in straighter and rounder bores. Synchronised servo stroke and spindle functions maintain a constant crosshatch finish throughout the bore, ensuring consistent surface finishes from end to end.

The Windows-based PC control system offers an intuitive interface for quick operator training and minimised setup time, complemented by optional configurable, multi-level permissions depending on the user role. The new Sunnen 2 control is designed with ease-of-use and setup as a priority. A bore profile display shows bore straightness during the cycle, enabling real-time monitoring, while multiple tooling options accommodate various honing tools for different applications and bore sizes.

Designed for integration with robotic systems, the SV Systems offer an optional automation interface for 24/7 operation. These automation-friendly systems are designed for the integration of part-handling systems to increase efficiency. Heavy-duty construction ensures superior performance and a long, trouble-free life. The EtherCAT industrial communications protocol minimises machine response time and increases the level of control. LED work area lighting improves visibility during operation.

The High Production SV Systems boast advanced safety features including a safety PLC, Safe Drive System and secondary stroker brake. All models, including the SV35, SV3000, SV3100, SV3400 and SV3500 series, comply with the European Machinery Directive (CE). Meanwhile, all models feature Beckhoff electronics with large colour touchscreens and a multi axis handwheel helps reduce setup time and increase machine "uptime". An optional post-process gauging system allows data collection and machine process control to sub-micron tolerances. In addition to selectable inch/metric units, multiple languages are screen selectable, which facilitates use in various global markets.

Sunnen writes its own code for the machines, providing flexible and modular machine designs for tailoring the honing process to the application for maximum performance and efficiency. Sunnen honing machines are backed by a 3-year warranty. Sunnen's commitment to precision and performance is represented by these complete high production solutions for machine, fixturing, automation, tooling, abrasives, coolants and more.

For more information on the SV Systems, visit ***https://www.sunnen.com/Catalog/Honing/Honing-Vertical-Machines***

Sunnen highlights HTE-1600W Tube Hone designed for small diameter, long bore applications

All-electric, high-efficiency machine delivers superior bore geometry and surface finish for firearms, medical, mining and energy applications.

Sunnen Products Company highlights its HTE-1600W Tube Hone, an all-electric precision honing machine designed for optimal bore geometry and surface finish in small diameter, long bore applications.

The HTE-1600W sets a new standard in bore finishing for the firearms and defense, medical, mining and energy industries. This innovative machine features an all-electric design, ensuring ease of maintenance and up to 90 percent efficiency. The HTE-1600W excels in processing parts with IDs from 4-20 mm and lengths up to 1,500 mm, delivering ideal bore geometry and surface finish.

At the heart of the HTE-1600W is advanced technology that drives superior performance. Its active 3-axis function control manages stroke positions, motion control, stone feed, spindle speed and cutting pressure, resulting in high accuracy and superior bore geometry. The machine offers 100 percent process control with tool overload protection, preventing tool breakage and ensuring consistent results.

Compared to traditional bore lapping methods, the HTE-1600W offers significant advantages. It substantially reduces cycle time, decreasing processing time compared to manual bore lapping. The machine's stroke repeatability within 0.006 in, 0.15 mm, ensures consistent and precise honing results. A size lock system with stone wear compensation maintains accuracy over time and reduces the need for frequent adjustments.

The HTE-1600W's design incorporates a one-piece base for improved performance and cost-effectiveness. Additionally, the machine's travelling steady rest provides additional support for the tooling used with long workpieces, enhancing versatility.

The machine is compatible with Sunnen MMT and LBT tools, offering flexibility for various small, long diameter bore applications.

Sunnen's commitment to quality is evident in the HTE-1600W's 3-year warranty. The machine interface is available in 13 languages, enhancing its usability for operators worldwide. Additional features include a dual filtration system for clean honing fluid and improved part quality and the ability to hone for time, number of strokes, or to a programmed diameter, offering flexibility to meet various part requirements.

For additional information on Sunnen and the HTE-1600W Tube Hone, visit ***www.sunnen.com***

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Why you need a Timesavers deburring machine

The role of forming and fabricating equipment in manufacturing forming and fabricating equipment are essential tools in metalworking, playing a crucial role in shaping, cutting and preparing materials for various applications. From bending and stamping to shearing and punching, these machines provide the precision and efficiency needed to meet the high demands of modern manufacturing. While cutting machines provide value and efficiency, they also create bottlenecks of their own often by out-producing hand grinding and finishing. Deburring equipment relieves those bottlenecks created by cutting processes

Whether producing components for aerospace, automotive, or construction, the right equipment ensures quality, speed and reliability. But while forming and fabricating machines are the backbone of production, there's another critical element that often goes overlooked; the finishing process.

Types of forming and fabricating equipment

Laser, plasma and waterjet machines: These are three popular methods for precision cutting. They are used to cut intricate parts and are essential for any manufacturer who is looking for a variety of cuts or batch processing.

Press brakes: Press brakes are used to bend and form sheet metal into predetermined shapes. Their versatility makes them ideal for industries requiring precision bends and folds, such as aerospace and automotive manufacturing.

Shears: Metal shearing machines are designed to cut sheet metal with minimal waste. They are crucial for creating clean, straight cuts for further processing.

Punch presses: Punch presses use dies to create holes, slots, or custom shapes in sheet metal. These machines are vital in industries like construction and appliance manufacturing.

Stamping machines: Stamping machines are employed to press shapes into metal sheets or plates. They are key for producing parts in bulk with intricate designs.

While these machines handle the heavy lifting of shaping and cutting metal, they often leave parts with burrs, sharp edges, or inconsistent finishes. This is why Timesavers metal machines are a game changer and increase operational efficiency.

Why Timesavers metal deburring and finishing machines are essential

Timesavers specialises in metal finishing machines designed to improve the quality, safety and aesthetics of parts produced by forming and fabricating equipment. Here's why adding these machines to your workflow is a smart investment:

Deburring for safety and functionality: Burrs left behind by laser cut, plasma, waterjet or other cutting processes can compromise the safety and functionality of parts. Timesavers deburring machines efficiently remove these imperfections, ensuring smooth edges and safe handling.

Achieving consistent surface finishes: Many industries demand specific surface finishes to meet aesthetic and functionality requirements. Timesavers machines can achieve consistent finishes across large batches, enhancing the overall quality of the product without compromising the integrity of the metal.

Improving part performance: Parts with rough edges or inconsistent finishes can lead to issues in assembly or operation. By refining surfaces, Timesavers machines improve fit and performance, reducing the likelihood of rework or product failure.

Streamlining production: Integrating Timesavers machines into your production line reduces the time and labour required for manual finishing. Its automated systems boost throughput, break bottlenecks and ensure a seamless transition from fabricating to final assembly.

Enhancing aesthetic appeal: In industries like consumer electronics or architecture, the appearance of metal parts matters as much as their function. Timesavers machines produce professional finishes that elevate the final product.

The Timesavers advantage

Timesavers offers a range of industrial machines tailored to the needs of metal fabricators:

Deburring machines: Remove sharp edges and burrs for safer, more reliable parts.

Edge conditioning machines: Create uniform, rounded edges for enhanced paint adhesion, weld preparation, safety and aesthetics. These machines utilise different conditioning technologies, such as barrel, top and rotary brushes, to achieve our customers' desired edge condition parameters.

Finishing machines: Deliver consistent finishes that exceed industry standards. Heavy slag removal machines: Remove flicked and rewelded dross in a single pass with our heavy slag machines.

Laser oxide removal machines: Timesavers rotary brush machines can be installed with special brushes that remove laser oxide from parts.

Cylindrical finishing machines: Deliver consistent finishes to cylindrical tubes and pipes.

By incorporating Timesavers machines into your workflow, you not only enhance the quality and quantity of your throughput but also position your operation for greater efficiency and competitiveness in the market.

Conclusion

Forming and fabricating equipment lay the foundation for manufacturing excellence, but the finishing process is what ensures a product's safety, functionality and appeal. Timesavers metal finishing machines bridge this gap, offering solutions that streamline production and elevate the quality of your parts. Whether you're a small job shop or a large-scale manufacturer, investing in Timesavers machines is a step toward achieving precision, efficiency and unparalleled craftsmanship.

Timesavers is one of the oldest, largest and most advanced wood and metal finishing equipment manufacturers. It continually develops pioneering advances in new wide belt abrasive finishing and metal fabrication machinery and introduces them to the rest of the industry. Since 1946, it has partnered alongside its clients to overcome unique challenges and meet particular requirements. In over seven decades of service, it has worked with almost every type of industry to create innovative solutions that redefine the way you finish your materials. It is a custom woodworking and metalworking solutions provider serving clients worldwide through its network of trusted distributors. The company specialises in developing advanced finishing products for woodworkers, metalworkers and other manufacturers that deliver the finest finish in the world. These products offer multiple advantages that your business can benefit from, including higher productivity, more efficiency and reduced waste, contributing to a better bottom line. When you become a Timesavers customer, you can count on its impressive equipment performance and reliable, personalised assistance in achieving your goals.

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Global aerospace MRO boom highlights crucial role of metal finishing

UK firm Midland Deburr & Finish is ready for lift-off

As global air travel surges beyond pre-pandemic levels and commercial airlines scramble to maintain aging fleets, the aerospace industry's attention has turned sharply toward Maintenance, Repair and Overhaul (MRO) services. With new aircraft deliveries lagging and retirement rates at historic lows, MRO operations are experiencing unprecedented demand and, behind the scenes, metal finishing is playing a crucial, if often overlooked, role in keeping critical components safe, compliant and flight-ready.

One company on the frontline of this shift is Midland Deburr & Finish, a specialist subcontractor based in Lye, Stourbridge. Under the leadership of managing director Chris Arrowsmith, the firm has built a reputation as a go-to partner for high-quality metal deburring processes including vibratory deburring, tumbling and vibro deburring which are essential for maintaining the integrity and performance of aerospace components.

"There's no margin for error in aerospace," Chris Arrowsmith says. "Whether it's a newly milled titanium bracket for a jet engine or a critical aluminium component being overhauled, the finish has to be perfect. That's where our processes come in."

With airlines extending the service life of aircraft and parts often undergoing multiple MRO cycles before retirement, the importance of finishing has grown exponentially. According to McKinsey's 2024 aerospace outlook, global MRO spending is set to rise steadily to around $135 billion by 2034, fuelled initially by maintenance needs on older fleets and eventually by broader fleet expansion. While newer aircraft may require fewer maintenance interventions over time, the current landscape tells a different story: tens of thousands of metallic parts still flowing through the global supply chain every day, each needing precise, repeatable finishing.

Midland Deburr & Finish's core service, vibratory deburring, has become a workhorse in aerospace finishing. The process involves placing components into a vibrating bowl filled with media, often ceramic or plastic shapes and a compound solution. The vibration causes the media to rub against the components, gently removing burrs and refining surfaces. It's a method that balances consistency with efficiency, a combination critical for parts that must meet strict fatigue and dimensional tolerances.

"Vibratory deburring is ideal for aerospace parts because it's consistent, scalable and allows for close process control," Chris Arrowsmith explains.

"We've spent years fine-tuning our equipment and chemistry to deliver repeatable results, which is exactly what aerospace primes and MROs need."

While vibratory systems handle the bulk of aerospace components, tumbling still has a place in the toolkit, especially for delicate

or oddly shaped parts. In tumbling, components rotate in a barrel with abrasive media, offering a gentler action that suits specific geometries. Though it's one of the oldest finishing techniques, tumbling has evolved significantly. Today's systems are digitally controlled, media-optimised and capable of producing fine finishes that meet stringent aerospace requirements.

"It's still the go-to for some geometries," says Chris Arrowsmith. "Especially when you want a softer action or are finishing parts that don't lend themselves to vibratory motion. A lot of people are surprised by just how advanced tumbling has become."

At the intersection of these two processes lies vibro deburring, often used inter-changeably but in practice referring to any vibration-assisted finishing process that improves part surfaces and edges. With airlines pushing for faster turnaround times and MROs under pressure to deliver, vibro deburring is prized for its speed and repeatability.

"Speed matters more than ever," Chris Arrowsmith notes. "When a grounded aircraft is costing tens of thousands a day, any delay is expensive. Vibro deburring lets us process parts quickly without compromising quality and that's a big win for the MRO sector."

As OEMs struggle with supply chain constraints and ramp-up timelines for next-generation aircraft, small and medium-sized enterprises like Midland Deburr & Finish are proving invaluable to the broader aerospace ecosystem.

Their flexibility, technical focus and proximity to UK aerospace hubs make them ideal partners for Tier 2 and Tier 3 suppliers facing capacity crunches or accreditation requirements. With capabilities in process validation, traceability and media recycling, the company meets the standards expected by NADCAP-accredited and AS9100-certified customers alike.

"We're seeing more demand from companies who've traditionally done their deburring in-house," says Chris Arrowsmith. "But as the pressure ramps up, they're realising the value of working with experts who do this day in, day out."

While much of the conversation around MRO focuses on engines, avionics and airframes, the finishing of metal components is a vital quality gate and one that has a direct impact on safety, performance and part longevity. In a sector where even a microscopic burr can lead to premature fatigue or failure, the role of companies like Midland Deburr & Finish cannot be overstated.

"The MRO boom is exciting, but it's not just about volume it's about precision," Chris Arrowsmith states. "We don't just smooth parts, we make sure they're safe, compliant and ready to fly."

As the global commercial fleet expands by more than three percent annually over the next decade and next-gen aircraft continue to enter service, the need for expert, adaptable finishing partners will only grow. For Midland Deburr & Finish, the aerospace sector's current turbulence may well mark the beginning of its most productive and high-flying chapter yet.

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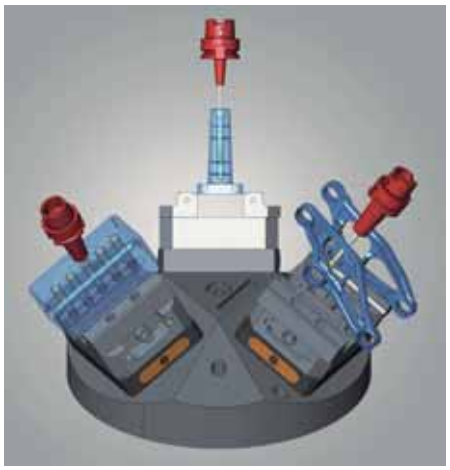
OPEN MIND releases hyperMILL 2025

Ease of use for CAM models and powerful CAD functions

OPEN MIND has now introduced the 2025 release of its hyperMILL® CADCAM suite. The highlight of the new version is the easy-to-use, automatic deburring function. The 2025 release includes a new tessellation algorithm and a simplified element display for CAD models, which helps further accelerate the CAD part of the software.



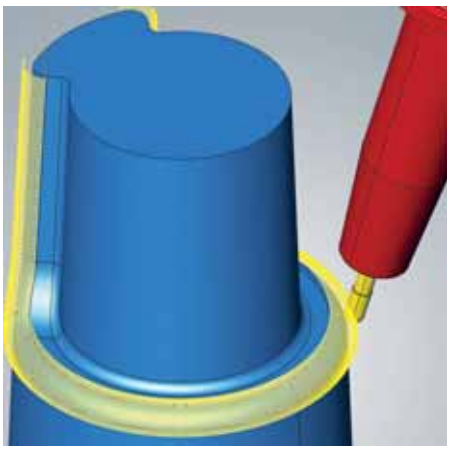
Source OPEN MIND: *hyperMILL® 2025 offers a package with comprehensive strategies for deburring directly on the machine.*

Deburred edges and holes are crucial from a functional perspective and significantly enhance the quality and value of the end product. hyperMILL 2025 offers a package with three new strategies for deburring directly on the machine. Users can deburr a wide variety of component geometries quickly and reliably. The 5-axis deburring function is an effective solution for removing sharp edges from a component. Once the edges have been selected, the strategy automatically calculates all toolpaths.

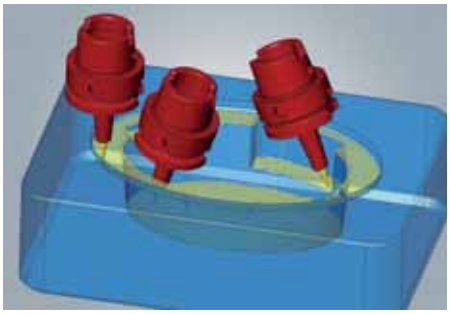
The strategy incorporates both a 3-axis and a 5-axis mode, in which machining is indexed wherever possible. The same applies to the deburring strategy for edges on holes and intersecting holes. Another approach in this context is hole brushing, which uses a special brushing tool to deburr cross holes, threads, or other features, or to enhance surface quality. The machining process is divided into several phases, with machining parameters such as spindle, feed rate, speed, coolant and dwell time defined for each phase.

5-axis automatic mode

The new 5-axis algorithm in hyperMILL calculates an optimal machining sequence for simultaneous and indexed tool movements, thanks to the pre-analysis of the entire toolpath. Both indexed and simultaneous processing phases are selected automatically, with the indexed method preferred for its faster operation. The new 5-axis ISO Machining strategy enables machining of surfaces according to the alignment of the ISO lines, U and V. Additionally, a high-precision surface mode with a uniform point distribution is available, along with feed adjustments for curvatures and 3D radius correction. This feature is also applicable in 5-axis profile finishing for both surface and cavity machining. Both strategies build on proven 3D techniques.

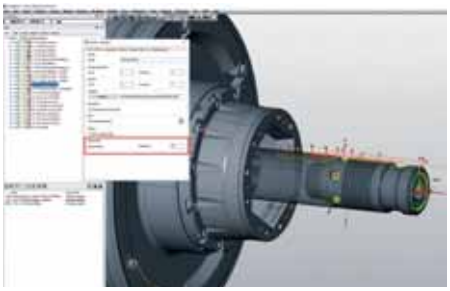


Source OPEN MIND: *5-axis machining of ISO surfaces with increased surface quality and programming support through intelligent algorithms.*



Source OPEN MIND: *The improved version of 5-axis profile finishing incorporates many familiar and innovative functions from 3D profile finishing.*

Milling and turning



Source OPEN MIND: *New handling of stock: hyperMILL® creates all stock automatically and in the correct sequence across all processing modes.*

The pocket milling algorithm has been redeveloped for 3D-optimised roughing to achieve greater efficiency during the roughing process, especially when machining large lateral infeeds. You can better control toolpath rounding by defining the contour radius and path radius separately. This is important for the new 'Axis Parallel mode' machining strategy when working on flat surfaces. Additionally, there are new functions for turning. Using the 3D model to create a V-sketch for quickly and easily defining turning contours is now possible. You can utilise the V-sketch to specify dimensions and tolerances. Based on these values, the turning contour can be re-positioned at the tolerance centre.

The new automatic stock chain enhances security, particularly during transitions between turning and milling operations or other projects with numerous process steps. hyperMILL automatically generates all stock in the correct sequence in the background, even if the job order has been modified.

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Available videos

You can find the following videos on our YouTube channel:
https://youtu.be/JuMSalWzua0?si=DrCwaRwugeNj_tly

How robots and LUKAS-ERZETT carbide burrs are the key to more efficient deburring and increased productivity

Efficiency plays a decisive role in today's production processes. Time and cost savings coupled with maximum precision are vital if a company is to stay competitive. A key process step is deburring, a task that requires not only precision but also consistent results.

The solution? Automation with robots. With their high repetitive precision and reliability, robots enable both simple and highly demanding deburring tasks to be carried out efficiently on many different materials. High-performance tools specially designed for intensive use with robots are indispensable here, such as the carbide burrs from LUKAS-ERZETT.

Robotic deburring is in greater demand than ever in most industries, helping to reduce costs, boost productivity and optimise product quality and reliability.

From the automotive industry to the aerospace sector, machine, plant, tool and mould construction, through to the furniture industry or medical technology and electronics, robotic deburring offers distinct advantages.

In addition to the efficient use of resources, these also include high process reliability and a consistently outstanding surface and workpiece quality, for example when deburring precision components such as gear wheels or turbine blades. The capability for multi-process machining and automatic tool changes can also help increase efficiency. This applies in practically every industry and to the various machining materials such as cast material, steel and stainless steel, non-ferrous metals like aluminium, as well as plastics, composite materials and wood.

However, state-of-the-art robots designed for handling the machining materials and workpieces are just one prerequisite for achieving the desired efficiency, productivity and quality goals. Another crucial factor is the tools with which the robots perform their tasks, such as the versatile, high-performance carbide burrs developed by LUKAS-ERZETT for use with robots.

LUKAS-ERZETT helps its customers from various industries make best use of robot systems with a wide range of innovative and high-performance carbide burrs.

LUKAS-ERZETT GmbH & Co. KG
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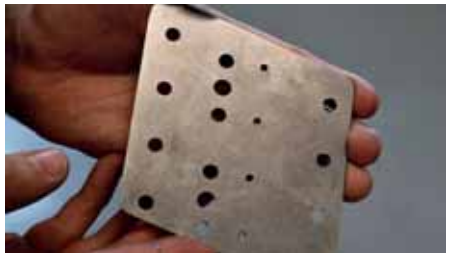

Deburring solutions are needed wherever holes are drilled

Drilling creates burrs. These burrs must be removed to ensure the functionality of the workpiece. Lässer AG uses several tool solutions from HEULE Precision Tools in the production of its embroidery machinery. This results in consistent deburring results and simplified processes that can also be carried out by trainees.

Lässer AG is a leader in the field of large embroidery machines. With over 70 years' experience, the family-run company develops and produces its machines exclusively in Switzerland using state-of-the-art production facilities.

When you enter the company site in Diepoldsau, Switzerland, you immediately notice the spirit of innovation and enthusiasm for new technologies. The factory is equipped with the most modern CNC machines and production processes are optimised wherever possible. For some time now, the responsible managers have been relying on various solutions from HEULE Precision Tools for machining bores on both sides of the workpiece.

Pascal Etter, apprentice manager for mechanical professions says: "HEULE provides us with tools for a wide range of applications. We have been offered alternatives in the past, but we are convinced by HEULE and the exceptional quality of the tools."

Another big plus point for Lässer AG, which no longer has a large warehouse, is that HEULE's headquarters is only 6 km away and the tools used are available from stock.

Simple to use, impressive results

In the modern production hall, various HEULE tools are used for back bore machining. An example can even be found in the apprentices' workshop. As part of a project, it independently created a production concept for the manufacture of stitch plates for the embroidery machines. For night-time operation, automated production of the stitch plates is set up using robots. In the morning, the finished workpieces are unloaded and the CNC machine is set up for single-part production.

The main requirement for the individual process steps and tools is very high reliability.

After the first runs, the problem of burrs on the back of the bore appeared. These burrs had to be removed manually. By using two COFA deburring tools, C2 Ø2.8 and C6 Ø6.5, on the machine, the burrs can now be completely removed on both sides.

Pascal Etter, who oversaw the project with the apprentices, is impressed: "The programming is easy and the blade change can be done even without a lot of experience. Ideal for our apprentices."

The approximately 300,000 bores per year are now deburred reliably and with consistent results. This means that the needles on the finished embroidery machine have no problems guiding the thread through the perfectly deburred bores.

Trouble-free back spotfacing

Right next to the apprentice workshop, other manufactured parts are ready for further processing. During the production of counterbores for screw heads, bore-Ø15.0 mm, counterbore-Ø 30.0 mm, into a cast part, numerous problems have occurred in the past. The backspotfacer previously used had a very short service life and the results varied enormously.

The use of the BSF backspotfacer from HEULE has greatly increased process reliability and the results and tool life are impressive. The blade can be easily changed in a few simple steps and the drilling/counterboring ratio of 2.0 is no problem for the BSF; a ratio of up to 2.3x bore diameter is possible. The approximately 12,000 counterbores per year can now be completed not only efficiently, but also easily.

Automated deburring on both sides

Driver guides for embroidery machines is the third application at the plant in Diepoldsau. Around 2,200 square tubes made of aluminium, EN AW-6082 (3.2315, are produced every year. With 84 bores per part, this results in around 200,000 bores per year, all of which must be deburred. In the past, the front burr was removed with a countersink and the back burr with a ground piece of steel. As this process was very time-consuming, Pascal Etter looked for an alternative deburring solution.

He found the perfect solution with the SNAP chamfering tool from HEULE. The tube is deburred on both sides in a single operation, without changing tools and without turning the workpiece.

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The next generation in deburring

As a specialist for levelling and deburring, ARKU continually sets new standards through innovative ideas and developments. This is done in close collaboration with the customers.

"We are known for our innovation," says sales director Andreas Hellriegel. A team of engineers and sales professionals at ARKU drives product development forward. Customer feedback is specifically addressed and turned into clever products. As a result, ARKU has been repeatedly named one of Germany's most innovative medium-sized companies.

Only when all signals are green does a new machine reach production readiness.

Another innovation is the integration of the ARKU Wizard into the new machine models. This provides users with an intelligent interface that allows the machine to automatically adjust itself, preventing operator errors.

ARKU Maschinenbau GmbH Tel: 0049 722 150 090
Email: info@arku.com www.arku.com

The next generation of deburring machines

In its own levelling and deburring centres, the technology is further developed and optimised together with customers. "This is done based on concrete application cases and tests that we conduct daily," explains Andreas Hellriegel. The goal is always to find a suitable technical solution or achieve time and cost savings for our customers. These customers come to ARKU with very specific requirements, such as sheet metal parts cut with a fibre laser. The cutting process creates burrs that are difficult to remove. For this, ARKU has developed a whole series of EdgeBreaker® machines under the names NEXT and FIBER. After successful testing, these machines were introduced to selected customers. They can deburr and round the edges of parts cut with a fibre laser on both sides in just a single pass. "With the EdgeBreaker® 3000 NEXT and the FIBER, we have reached an even higher level," says Andreas Hellriegel. With the new machines, laser burrs can be removed more reliably than ever before and this applies to materials up to 2,000 mm in width.

Because stagnation is synonymous with regression, ARKU currently has further developments for new products in the pipeline. While speed is one of the key attributes of the Baden-Baden specialist, precision is the top priority. Before a machine is considered "tested," it goes through a roughly one-year testing phase. Only when all signals are green does a new machine reach production readiness.

Filtermist provides fitting solution for oil mist compliance

Workplace health and safety is always paramount for prestigious manufacturing companies and that is why Eastleigh-based GW Martin Ltd has invested in oil mist extraction technology from Filtermist. Serving prominent customers in the defence, aerospace, automotive, vacuum filtration and medical sectors, GW Martin has followed a continuous improvement programme that has seen the Hampshire manufacturer invest heavily in new plant and equipment including fitting oil mist filtration technology from Filtermist to new and existing machine tools.

Founded in 1959, the company's transformation from traditional cam auto machines in the 1970s to sophisticated CNC equipment represents a remarkable journey of technological adaptation. GWM's diverse capabilities enable it to span across multiple critical sectors and investment in machine tools from Mazak, CMZ, Citizen Miyano, YMT, Star, Doosan and Index are prominent. The one thing these prestigious machine tool brands have in common is the retrofitting of Filtermist oil mist filtration systems.

Alluding to why the ISO:9001 and ISO:14001 company adopted Filtermist systems throughout its 25,000sq/ft south coast facility, Stuart Yalden, MD at GW Martin, says: "Back in the 70s we had a pretty oily factory and it was a completely different environment. Over the last 10 years, we've had a big programme of re-investing in the business. We've updated our machines, the sort of business we

conduct and the workshop we have. We put in new lighting, machines and even solar panels on the roof. What we didn't want was the traditional 1970s oily workshop. We needed to deal with any oil and mess that was coming out of the machines and with Filtermist, we have a great system that handles that."

Looking at the transition to installing the Filtermist mist extraction technology in the workshop, Stuart Yalden continues: "Many manufacturers supply their machine tools 'ready to go', either with some filtration or whatever we specify for our package. What we've done is retrofitted the Filtermist mist extraction units to many of our machines. We're delighted with the units. We have a new Mazak machine that came in just four months ago and we wanted a Filtermist unit installed on that. We asked Filtermist and they came in within a couple of weeks of the machine being installed and very quickly and very thoroughly put the new unit on the machine."

The FX Series of oil mist filtration technology is prominent at GW Martin, with the FX4002 oil mist filter widely adopted on many of the turning centres at the subcontract manufacturing business. With an airflow of 1,250 m^3/hr at 50Hz and 1,500 m^3/hr at 60Hz, the compact 23 kg FX4002 has a host of mounting options and with a diameter of 398 mm and a height of 682 mm when fitted with an afterfilter, the robust systems are compatible with most machine tools. Furthermore, the units are easily accessible for maintenance and servicing purposes.

As Stuart Yalden explains: "Maintenance is a critical factor. We've explored a few different options for filter units and we've had mixed results with other suppliers. What we found with Filtermist is that the units are very easy to retrofit, service and maintain. It was a key requirement for us to make sure it was easy. We wanted to ensure that the units work every day, work the first time and are easy to maintain and run. We have also found the installation to be very thorough. The Filtermist service package is also straightforward to manage. We even had one of their engineers do a 'smoke test' on a machine where a smoke-generating machine was placed in the work envelope to demonstrate how quickly the Filtermist system can clear a machine."

Performance and demonstration

Commenting upon why every manufacturer should be using an oil mist filtration system, Lydia Barber, marketing & customer experience director at Filtermist, says: "Any CNC machine using coolant or neat oil will be creating a mist when the coolant is sprayed at high pressure and high speed. This mist can be hazardous for employees' health if they breathe it in. It can also cause a fire hazard. It's nasty stuff to have in the work environment, especially when it gets in the air as you can taste it."

Differentiator

Filtermist differentiates its quality, performance and user friendliness from its rivals through a number of key parameters. Lydia Barber continues: "You can fit out your entire factory with Filtermist technology. At GW Martin, you can see our technology on machine brands such as Citizen, Miyano and Mazak, as well as on a popular DN Solutions Lynx machine from Mills CNC. We manufacture a complete range of sizes and air flow extraction rates to cope with all different types of applications and extraction requirements."

Regulatory landscape

COSHH Regulations have been a driving force in addressing the challenges in the industry. As Lydia Barber notes: "We've all been to machine shops where you can taste oil mist in the air and it's a legal requirement to get rid of it. COSHH (Control Of Substances Hazardous to Health) regulations require employers to protect their employees from exposure to hazardous substances and the HSE (Health & Safety Executive) actually recommends putting an LEV (Local Exhaust Ventilation) system on every single CNC machine to make sure that mist is removed effectively. If you've got a choice between working in a clean, modern workshop or a factory with mist hanging in the air, it's a no-brainer. This goes beyond compliance; it is fundamental to workplace quality and employee well-being. Nobody wants to work in a dirty environment."

Future outlook

COSHH Regulations have been in place since 1988. However, the Health and Safety Executive (HSE) is increasingly enforcing compliance through targeted inspection programs and this should serve as a notice for manufacturers.

The collaboration between GW Martin and Filtermist represents more than just a technological solution. It embodies a progressive approach to manufacturing that prioritises employee health, operational efficiency and environmental responsibility. As Stuart Yalden reflects on GW Martin's journey, mist extraction is no longer an optional extra but a fundamental aspect of modern manufacturing.

You can contact its team of experts to find out more by calling: 01952 290500 or via email ***sales@filtermist.com***

Filtermist Tel: 01952 290500 www.filtermist.co.uk

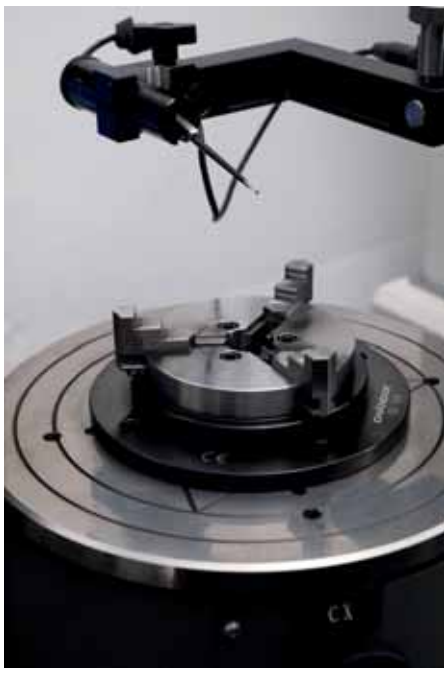
Closing the gap in surface finish and form measurement

As production demands evolve, so too must the tools that ensure components meet increasingly strict quality standards. For many manufacturers, the challenge isn't just achieving accuracy, it's doing so efficiently, without overcomplicating workflows or overspending on features they'll never use.

Many quality teams find themselves paying for ultra-high-end systems with features far beyond their needs, such as 0.0001 µm resolution or complex lab-only functionality. While these capabilities look good on paper, they often exceed the requirements of production-level QA. Manufacturers seeking reliable automation, fast analysis and simple reporting are too often forced into costly overinvestment just to access basic usability.

But this can often leave businesses facing a difficult trade-off: over-invest or underachieve. High-end systems demand extensive training, tightly controlled environments and complex software. More accessible systems, while easier to operate, often compromise on reporting, depth of analysis and automation.

And, in the mid-range? This portion of the surface and form measurement market more often presents the persistent challenge that leaves a noticeable lack of balance between usability and accuracy, with a vast number of manufacturers finding themselves caught between the two extremes.



As a result, despite advances in their manufacturing processes, many facilities will still rely on manual surface finish testers and ageing roundness systems to avoid overinvestment. These setups are slow, operator-dependent and prone to inconsistency. They lack automation, traceability and integrated reporting, issues that directly translate to longer QA cycles, missed tolerances and costly rework.

That's where Figura comes in, the new precision metrology system from Bowers Group that has been developed to bridge this gap.

It delivers high-precision measurement of surface finish, contour and roundness with high accuracy and efficiency. It features intuitive controls and built-in automation, without the intimidating price tag or steep learning curve often associated with high-end systems. While its capabilities rival more advanced lab systems, it enables fast, standards-compliant measurements, without the excessive overhead.

Where higher-end systems may struggle on the shop floor, often requiring climate-controlled rooms, highly trained operators and time-consuming setups that can disrupt production flow, Figura is purpose-built for the realities of modern manufacturing environments. Its rugged construction includes anti-vibration technology and integrated temperature sensors to maintain accuracy even in fluctuating conditions, while optional anti-collision protection adds a layer of safety in busy production areas.

Unlike traditional lab-focused machines, Figura fits both in inline and near-line applications. Its compact footprint makes it easy to integrate into tight spaces and the modular probe design allows it to adapt to a wide range of parts and processes without complexity. The ergonomic build supports efficient, operator-friendly use, reducing fatigue and error.

Where it's common for metrology systems to treat automation as a premium, Figura includes it by default. Mid-tier systems often rely on add-on software or manual data handling to deliver SPC and ISO reporting, creating unnecessary complexity. Here, everything is built in: real-time analysis, digital traceability, Excel/PDF output and repeatable measurement sequences. It's an integrated solution that supports fast decisions, zero-defect goals and better use of QA resources. One-click PDF and SPC reporting simplify documentation, while integrated ISO, BS, DIN, ASME and JIS compliance makes regulatory audits smoother and faster.

Integrated reporting tools also automates documentation for every inspection. The

system creates a seamless digital trail for compliance, customer transparency and continuous improvement, making sure quality assurance is both efficient and audit ready in highly regulated sectors where traceability is critical.

For businesses committed to zero-defect manufacturing and continuous improvement, it is more than a measurement system, it's a powerful productivity tool that drives sustainability, compliance and lean efficiency from start to finish.

Boosting throughput and accuracy, surface finish measurement also plays a vital role in minimising material waste. By delivering precise, repeatable results, this range enables manufacturers to meet exact specifications the first time, significantly reducing rework, scrap and unnecessary resource use. This precision not only supports lean production but also encourages smarter material design and tighter tolerances.

There is also impact beyond production. Its high-accuracy measurements make it easier to sort and assess used parts, supporting refurbishment, remanufacturing and recycling. For companies adopting circular economy models, it delivers both environmental benefits and measurable cost savings, proving that precision and sustainability can work hand in hand.

In a landscape where manufacturers are under pressure to deliver greater precision, faster turnaround and more sustainable outcomes, all without inflating costs, a truly modern metrology solution is needed. One that offers the right balance of precision, speed and simplicity, enabling teams to streamline inspection, improve consistency and reduce reliance on highly trained specialists.

By combining high-performance measurement with user-friendly automation, built-in compliance tools and shop-floor-ready design, a system is needed that can bridge the gap within surface finish and form measurement options, delivering high-end features to mid-level processes.

Whether you're upgrading from manual systems or scaling up to meet tighter tolerances, Figura delivers the flexibility, reliability and insight needed to keep production moving and quality uncompromised.

Bowers Group
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Cutting-edge bore gauging system offers unmatched precision, versatility and efficiency for high-precision measurement needs

Sunnen Products Company, a leader in high-precision bore finishing and measurement, highlights the PGE-6000 Gauge, a cutting-edge bore gaging system that redefines accuracy, versatility and efficiency in dimensional measurement.

The PGE-6000 Gauge surpasses traditional mechanical gauges with its electronically amplified comparative system, offering unparalleled accuracy, reliability, versatility, simplicity and economy. Its proven PG gauge mechanical design, coupled with sophisticated electronics, positions it as the most adaptable bore gauging system in the market.

This advanced gauge provides the flexibility to measure in both inches and mms, catering to users working with diverse measurement standards. The menu-driven operator interface offers almost limitless customisation, allowing users to tailor the display and functionality to their specific preferences. Selectable resolution options, ranging from 0.01/0.001/0.0001 mm, deliver exceptional precision for a wide range of applications. Additionally, the gauge repeatability is +/-.00025 mm (+/- .000010").

Accommodating various bore sizes, the PGE-6000 features a standard measuring range of 9.40 mm to 38.10 mm, 370" to 1.500", which can be extended up to 74.30 mm, 3.000", with optional PG-250E Extension Fingers. Simple and quick calibration, along with an easy-to-follow setup menu, minimises setup time and reduces the learning curve for new users.

The PGE-6000 Gauge offers selectable scale settings, "Narrow"/"Wide", to optimise display and measurement sensitivity for different applications, as well as single or multiple measurement options for diverse inspection needs. Batch or serial number modes facilitate organised data collection and traceability. Programmable operator-defined default settings allow users to customise the gauge to their specific requirements, enhancing efficiency and saving time.

Measurement data is presented through a clear graphical and numerical value display, complemented by programmable visual limit indicators that simplify go/no-go decisions and minimise errors. Measurements are stored internally via the touch screen or optional foot pedal which eliminates potential errors with manual recording.

Portable with an external power supply, the PGE-6000 Gauge offers flexibility across various locations. Stored measurement data can be exported via a flash-drive or a PC cable which enables seamless integration with SPC software and other data analysis tools. The data display provides valuable insights, including average, median, standard deviation, minimum and maximum values. Compatibility with PG-400/PG-500 setting fixtures simplifies gauge diameter setting. Ring gauges may also be used to set diameter. The reversible base extends the measuring range with different finger sizes on each side, further enhancing versatility.

The PGE-6000 Gauge facilitates rapid data collection and analysis. Its proven floating reed system eliminates friction and wear, ensuring long-term reliability and consistent performance. Designed for ease-of-use and durability in everyday shop use, its rugged construction ensures longevity. The gauge accurately checks I.D., measuring variations in diameter indicating taper, barrel and bell mouth, even near ports, lands and at the bottom of blind holes. Its intuitive design requires minimal training, guaranteeing accurate measurements irrespective of the operator's skill level.

For additional information on Sunnen's PGE-6000 Gauge, visit: ***https://www.sunnen.com/Catalog/Gauges/Gauges-PGE***

Sunnen Products Company, a global 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.

Sunnen Products Ltd
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www.sunnen.com

Optical surface measurement from Mahr

Mahr has relaunched its powerful confocal microscopes from the MarSurf CM explorer product line. With the compact table-top systems, you can measure surfaces in three dimensions without contact, regardless of the material, extremely quickly and precisely.

Thanks to their robust design and insensitivity to environmental influences, the devices are suitable for use in test and inspection laboratories as well as for quality assurance in production. The confocal microscopes deliver precise and repeatable 3D measurements of almost all materials, such as metal, glass, ceramics, semiconductors, polymers or organic materials, in just a few seconds.

The areas of application for the optical systems are just as diverse. They are used for roughness measurements in accordance with DIN EN ISO 21920/25178, topography measurements such as volume, wear, isotropy or measurements of micro-geometries and layer thicknesses. The devices determine quantitatively traceable 3D characteristic values and are

therefore suitable for many industries such as the following:

- Automotive industry
- Mechanical engineering
- Electronics and semiconductor industry
- Microsystems technology
- Optics
- Medical technology
- Materials management

Two variants to choose from

The MarSurf CM explorer product line offers you user-independent and fully automatic measurements with a travel range of 100 x 100 mm and therefore uncomplicated operation. Depending on your requirements and measuring tasks, you can choose between the two variants MarSurf CM explorer 100 or MarSurf CM plus explorer 100, both of which have a very high repeat accuracy.

Patented multi-pinhole technology for ultra-fast image acquisition

The confocal microscopes guarantee their performance with ultra-fast image acquisition at high measuring point density thanks to the specially developed and patented multi-pinhole technology. This is a particularly low-noise process that ensures high-quality, unfiltered raw data. The devices also offer you high resolution with maximum robustness, edge acceptance and dynamics. They are also characterised by extremely low stray light and robust signalling with high light yield. As a result, they achieve height resolutions down to the nanometre range.

Mahr UK Ltd
Tel: 01908 563700
https://www.mahr.com/en-int/

Vision Engineering unveils the EVO Cam HALO

Suitable for a wide range of inspection applications, EVO Cam HALO combines stunning 4K image quality with advanced, adaptive illumination and new intelligent software, empowering users to capture the most challenging details with unparalleled accuracy.

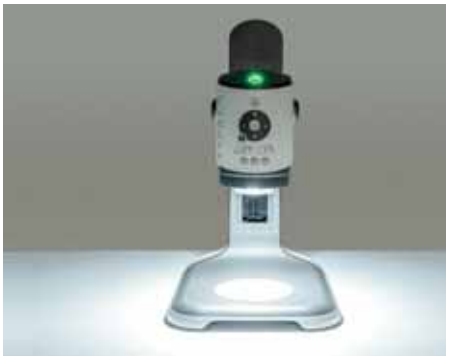
HALO's key features include 4K resolution which reveals previously obscured details with remarkable clarity, ensuring nothing escapes the user's view. A super-wide dynamic range ensures the user captures images with exceptional brightness and contrast, even in challenging lighting conditions. Additionally available with HALO comes a new enhanced Illumination package, including a quadrant light, panel light and white/UV light, to optimise illumination for a variety of inspection needs.

New intelligent hardware and software automatically detects lenses and adjusts magnification settings, ensuring seamless workflow and accurate results. Real-time insights are available providing intuitive image capture, measurement and analysis tools, enabling faster and more informed decision-making. Vision Engineering's popular 360 Direct/Oblique Viewer also works with HALO, enabling users to inspect details from different angles, revealing hidden features that would otherwise be inaccessible.

HALO is suitable for a wide range of applications, including medical device manufacturing and testing, especially when inspecting translucent tubes, electro-polished devices and other medical components with enhanced clarity and accuracy.

It is also effective at capturing fine details on small, reflective metal parts for precise inspection and quality control, perfect for micro-mechanics and in industrial manufacturing, where intricate assemblies, solder joints and other components can be inspected with improved precision and efficiency.

Commenting on the launch, Paul Newbatt, group sales and marketing director says: "We are delighted to bring EVO Cam HALO to market, confirming our reputation for innovation, whilst improving the inspection performance available within digital



microscopy. 4K image quality plus fully controllable lighting and flexible software available in multiple configurations means that our customers in a wide range of sectors can easily choose the most accurate and consistent digital system for their inspection requirements."

For more information, visit the EVO Cam HALO product page:
https://www.visioneng.com/products/digital-microscopes/evo-cam-halo/

Vision Engineering Ltd
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www.visioneng.com

Leading Chinese helical component manufacturer chooses Zenith of helical profile grinding

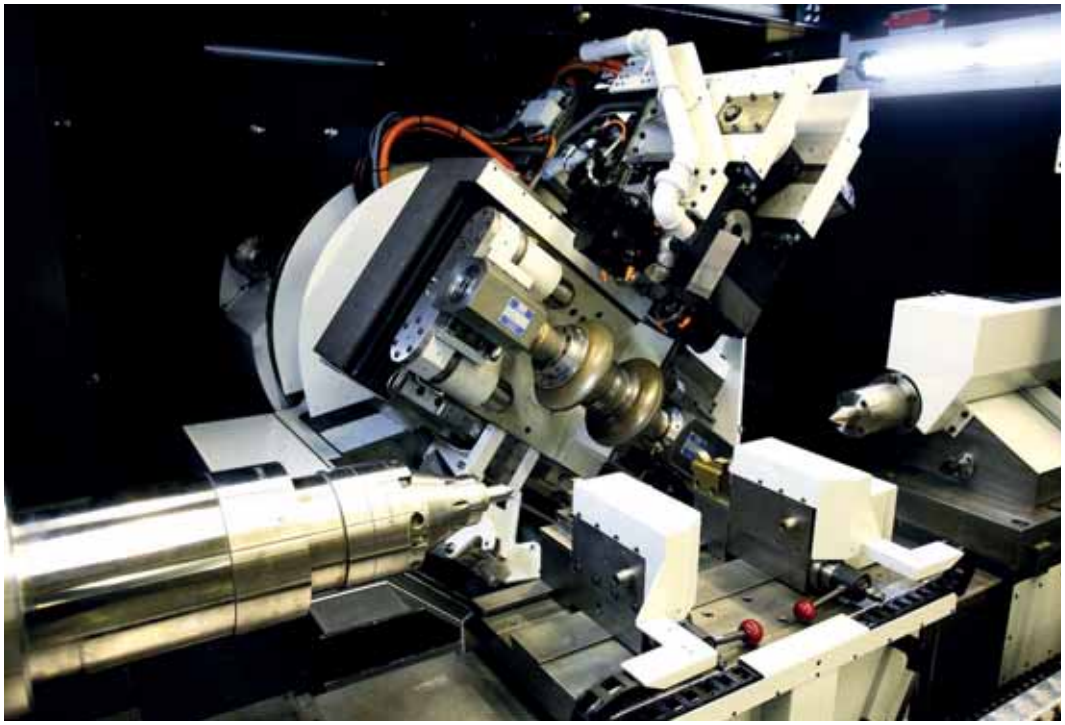
UK-based PTG Holroyd Precision is to supply one of its ultra-precise Zenith 400 helical profile grinding machines to a leading Chinese manufacturer of helical components.

Developed to precision grind components weighing up to 700 kg and measuring up to 420 mm in diameter, 2.2 m in length and with a maximum 100 mm profile depth, the Zenith 400 combines high stock removal rates with aggressive semi-finishing. It offers production rates and accuracies tailored to the most demanding of manufacturing strategies.

Scheduled for installation at the Chinese company's Chongqing-based production facility in summer 2025, the Zenith 400 is equipped with PTG Holroyd's proprietary dual grinding wheel system. This capability will enable operators to use either a 500 mm vitrified, dressable aluminium oxide grinding wheel for exceptional versatility in production strategies and product development, or diamond-hard plated CBN roughing and finishing wheels for cost-effective volume production.

"With the advantage of two grinding wheels, our customer will be able to complete both rough-grinding and finish-grinding in one seamless operation," comments PTG Holroyd Precision's sales director, Mark Curran. "By using CBN grinding wheels for both grinding processes, they will benefit from significantly reduced cycle times and improved heat dissipation. Thanks to the greater resistance of CBN, they will also enjoy extended wheel life, with no need for dressing, even at high stock removal rates.

"We are extremely pleased to have received this significant machine tool order," adds Mark Curran. "In addition to the Zenith 400's well-proven capabilities, its dual grinding wheel capability was clearly a major attraction to the customer in view of the efficiencies this will bring to their production processes."



Twin-plated CBN wheel setup on the Zenith 400, for a refrigeration screw.

The Zenith 400: at the pinnacle of helical profile grinding

Providing considerable flexibility in helical profile grinding, the Zenith 400 features advanced development and production software, making it well-suited to all user requirements, whether that is research and development or mass production.

Key features of the Zenith 400 helical profile grinding machine include:

- Vitrified Al2O3 and plated CBN grinding wheel options.
- Accelerated setup with fully automated grinding wheel balancing system.
- Powerful, menu-driven touchscreen programming.
- High stock removal rates, aggressive semi-finishing and precision fine finishing.
- Holroyd's unique on-board 3D CMM component scanning probe with fully automatic compensation feedback.
- High speed spindles and advanced in-process dressing systems to maintain profile accuracy and keep the grinding wheel in optimum condition.
- Complete integration with automated parts handling systems.

Incorporating the brands of PTG Holroyd, PTG Powerstir® Friction Stir Welding and Holroyd Precision Rotors, PTG has established itself at the forefront of high-precision machine tool design, build and supply for specialised applications. The range includes advanced machine tools for the production of complex helical components such as compressor rotors, pump screws and high-accuracy gears and Powerstir machine tools for friction stir welding advanced alloys used in transport applications. With production facilities in the UK, USA and China, Holroyd Precision Rotors manufactures the special purpose, ultra-precision helical components used in a wide range of industries, including refrigeration, air-conditioning, gas and vacuum pumping, industrial air handling, aerospace, medical equipment, motion control, power transmission, power generation, oil & gas, fluid transfer and high-end automotive. PTG also provides advanced technical consulting services.

PTG Holroyd
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www.holroyd.com

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Guhring breaks bounds of convention with new VOLLMER machine

When it comes to cutting tools, the Guhring brand is synonymous with innovation and pushing the boundaries of convention. Driving this culture is a management structure that provides its 48 worldwide subsidiaries with complete autonomy. Guhring UK has led the charge on several fronts, from powering its Birmingham facility with solar PV to investing in a VOLLMER VHybrid 260 grinding and erosion machine.

Like many of the world's leading cutting tool brands, Guhring has a longstanding partnership with VOLLMER. Guhring uses VOLLMER grinding and wire erosion machines worldwide to produce its premium carbide and PCD cutting tools. At its state-of-the-art 60,000sq/ft UK factory, Guhring manufactures a comprehensive range of standard and special cutting tools. It has dedicated PCD and solid carbide production departments and more than £5 m of cutting tools in stock for next-day delivery.

Unique in its approach, Guhring manufactures its own brand of 5-axis grinding centres for some of its tool production. This is complemented by advanced technology from VOLLMER, and at its UK site, two VOLLMER QWD750 wire erosion machines are employed for profiling and finishing PCD-tipped tools. The Guhring UK team attended the VOLLMER VDays event in Germany in 2022 to investigate new opportunities and it was the VHybrid that piqued its interest. With resource allocation directed to different projects in a post-COVID world, an eventual change of management at Guhring UK recently re-ignited the interest in the VHybrid technology.

The culmination of longstanding employee Gary Field taking up the role of production manager and the recognition of new PCD tooling opportunities both expedited the interest in advancing PCD processing technology. As Vollmer UK managing director Martyn Cross says: "The existing Guhring technology is very accurate for rapidly processing flat profile PCD tools, but it doesn't lend itself to the next generation of developments the company wants to sell."

Discussing the route to acquisition of the VHybrid 260, Guhring UK's Alan Pearce says: "We sent VOLLMER some PCD step drills to trial on the VHybrid and this was followed by some ball nose tools for a prestigious customer, results were exceptional. As production manager Gary Field interjects: "Guhring has a longstanding relationship with VOLLMER. So, we recognise the quality, service, technology and the prestige; all major factors influencing our decision."

The new VOLLMER VHybrid260 in action at Guhring UK.

The vertically aligned spindles on the VHybrid with the erosion disc in the lower spindle position.

Meeting the needs of the market

"Last year, my job role changed to production manager, giving me oversight of our PCD department. I spoke with Alan about our future direction and what we needed to keep moving forward. We want to develop new product lines, offer more diversity to customers and have a more expansive range of products. With the new VHybrid, we can immediately target several areas, with micro-drills being a priority for the electronics, medical and miniature industry sectors," says Gary Field.

Adding to this, Alan Pearce says: "We've never had disc erosion before, so we've never been able to machine solid PCD tools, PCD tools with blades through the centre of the tool, or tools with more complex geometries. Additionally, the VHybrid provides the flexibility to grind and erode all these in a single machine."

Installed in November 2024, the VOLLMER VHybrid 260 has already proven transformative to shop floor operations, despite Guhring still being on a learning curve. Alan Pearce adds: "The VHybrid enables us to combine multiple operations into a single machine. Rather than grinding

A solid tipped PCD drill being processed on the VOLLMER VHybrid 260.

a tool diameter, wire eroding and grinding drill points, we can combine all three operations into a single machine."

The benefits

Guhring has a prestigious list of OEM, Tier 1 and subcontract customers. For some of its automotive OEM clients requiring bespoke PCD step drills, PCD Drill Relap and PCD milling and reaming tools, Guhring has a long list of quantifiable benefits from the VHybrid. As early examples of savings derived from transferring tools from existing processes to the VHybrid, a PCD Drill Relap tool has moved from a two-machine 1-hour 25-minute process to a 29-minute process on the VHybrid, a 70 percent cycle time saving with additional setup savings. Production of another PCD Drill Relap tool has fallen from 1 hour 30 minutes to 21 minutes.

A PCD Step Drill requiring precision OD grinding on the company's Studer machine has fallen from three operations to two, with the VHybrid being responsible for slashing cycle times from 5+ hours to 1 hour 30 minutes. Another PCD Step Drill has seen processing times fall from 2 hours 25 minutes to just 30 minutes, with another that required point erosion and a step, falling from 3 hours on two machines to just 36 minutes on the VHybrid. The dramatic cycle time savings do not include the multiple machine setups and changeover times that are also being eliminated by the VHybrid.

Despite the cycle time and setup savings, the VHybrid also proves its credentials in like-for-like comparisons against Guhring's existing VOLLMER QWD wire erosion machines. On bespoke 10 mm 2 flute and a 3 flute 19 mm diameter PCD milling tools that were both previously processed in a single setup on the QWD 750 wire erosion machine, the VHybrid has slashed production times from 2 hours 45 minutes to 1 hour 17 minutes and from 1 hour 15 minutes to 38 minutes for the 10 mm tool.

The opportunities

The VOLLMER VHybrid 260 opens boundless opportunities for Guhring UK. Thanks to its steady rest system, the VHybrid allows the manufacture of tools with diameters as small as 0.2 to 0.3mm. This area has already been identified as having potential for significant growth.

VOLLMER UK managing director Martyn Cross says: "Guhring UK is the first company in the group to acquire this machine, other subsidiaries are already sending trial tools to the UK for samples. The machine is a technological shift. Ahead of the curve, the management team at Guhring UK invited VOLLMER to meet its sales engineers. We presented the VHybrid and its capabilities and they instantly recognised the potential for new tool development, quickly linking the machine capabilities to the challenges of their existing customers."

The opportunities extend far beyond carbide and PCD micro tools; tools with PCD blades through the centre and solid brazed PCD tip tools can also be processed. Going beyond competitors' capabilities, the VHybrid 260 provides Guhring with the potential to erode nearly limitless geometries in PCD.

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New E-learning platform to advance expertise in cutting tool production

ANCA CNC Machines has launched ANCA Academy, a new E-learning platform for its customers, designed to elevate skills in operating ANCA CNC machines and application software. Offering a mix of free and paid courses, ANCA Academy provides a professional platform to meet the needs of the evolving precision tool manufacturing industry through expert-led technical education.

Simon Richardson, global technical sales support manager, says: "At ANCA, we know how much our customers love to learn and our weekly Tool Tips prove it. With our machines and software being so powerful and versatile, continuous learning is key to unlocking their full potential. It is very true that you don't know what you don't know, but our structured E-learning modules mean that highly trained and proficient users can push boundaries, boost productivity and take their capabilities even further. We are helping our customers learn more to grind smarter."

ANCA Academy provides comprehensive training programmes that not only enhance individual competencies but also deliver measurable benefits for businesses. According to an IBM study*, employees trained via eLearning can increase productivity by 25 percent. By equipping teams with advanced skills, companies can expect improved machine efficiency, reduced downtime, enhanced production quality and minimised operational errors.

The ANCA Academy E-learning platform features courses tailored to a wide range of roles and skill levels. From foundational modules for beginners to advanced technical training for seasoned professionals, the courses cover essential topics in CNC machine operation, programming and application software. This ensures that every participant, regardless of their experience levels, gains valuable, actionable knowledge.

ANCA Academy offers the following flexible learning pathways:

Free introductory courses: Perfect for those new to CNC machining or ANCA software.
Single-course purchases: Ideal for targeted skill development.
Subscription models: Provides comprehensive access to a full suite of courses for ongoing professional growth.

Access to the ANCA Academy E-learning platform is available exclusively through the customer portal ANCA Club, ensuring a secure and dedicated learning environment. Membership provides seamless access to the platform, allowing learners to progress at their own pace with continuous support. Upon successful completion of courses, participants will receive ANCA Academy certifications, validating their expertise and contributing to their professional development.

For more information and to register, visit: *ANCA Academy*

*IBM Training building skills for a smarter planet – The Value of Training.

ANCA UK Ltd
Tel: 02476 447000
Email: ukinfo@anca.com
https://machines.anca.com

Improving propeller and helicopter blade performance and longevity by wet blasting

When it comes to maintaining precision aerospace components like rotor and propeller blades, wet blasting offers unmatched advantages:

- Preparation for coating, optimum surfaces for paint and other coatings.
- Corrosion and contamination removal, rapid cleaning without distortion.
- Damage-free finishing, wet blasting does not damage composite fibres.
- Maximum bond strength, optimum surfaces for adhesion.

Compared to dry blasting, wet blasting is gentler, dust-free, and delivers a cleaner, more uniform finish, ideal for materials like aluminium, titanium and composites.

From MRO to OEMs, it's the go-to finishing technology for increasing component longevity, safety and performance.

It's the ideal finishing solution for aerospace, rotorcraft, drones and marine aviation.

Did you know that leading aerospace manufacturers around the world are turning to wet blasting for its unmatched precision, efficiency and versatility?

Unlike dry blasting, wet blasting delivers superior surface preparation while reducing processing time.

Take Vapormatt's Leopard Cub automatic wet blasting machine for example. It has slashed NDT inspection time from three hours to just 20 minutes for a major jet engine manufacturer.

From precision surface finishing to defect detection, wet blasting excels in a wide range of applications:

- **Wet shot peening:** Achieves the same intensity as dry shot peening on fan blades, turbine blades and engine casings whilst producing a superior finish.
- **Surface prep for bonding and coating:** Produces an Ideal surface finish for composite fan blade, propeller blade and helicopter blade coating and bonding.
- **NDT crack detection prep:** Allows for faster and more efficient inspections by optimising surface conditions.
- **Coating preparation:** Prepares aerospace component surfaces for advanced coatings like CVD and PVD.
- **Additive manufactured components:** Removes powder from complex channels and enhances surface quality for 3D-printed aerospace components.
- **Cast and forged aerospace components:** Removes casting resist, burrs, heat scale, oxidation and more.
- **Components destined for space:** Helps ensure components withstand the rigors of space exploration.

When precision matters, wet blasting delivers results no other finishing technology can match. Discover how wet blasting can elevate your aerospace finishing processes, visit Vapormatt's aerospace OEM web page.

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ActOn Finishing unveils advanced drag finishing machine for high-precision surface finishing

ActOn Finishing, a leading name in surface finishing technology, has launched its latest finishing technology, the ADF Drag Finishing Machine. Engineered to deliver high-precision surface finishing, deburring and polishing, this state-of-the-art machine is set to revolutionise finishing processes across key industries, including aerospace, automotive, medical and tooling.

Designed and manufactured in the UK, the ADF Drag Finishing Machine offers a faster, more consistent and cost-effective alternative to traditional finishing methods. The high-energy process ensures minimal part-on-part contact, preventing damage while delivering superior surface quality. With features such as adjustable spindle speeds, customisable workpiece holders and a robust construction, this machine is tailored to meet the complex needs of modern manufacturing.

"The ADF Drag Finishing Machine is a game-changer for UK manufacturers," says Sid Gulati, managing director of ActOn Finishing. "By significantly reducing processing time and ensuring a uniform, high-quality finish, this technology helps manufacturers improve efficiency, reduce waste and maintain a competitive edge. It aligns perfectly with the demands for precision and reliability in today's high-value industries."

Key benefits of the ADF Drag Finishing Machine include:

- **Superior surface quality:** achieves a polished, precise finish with minimal manual intervention.
- **Faster processing times:** reduces finishing time significantly compared to traditional methods.
- **Damage-free process:** eliminates part-on-part contact, ensuring component integrity.
- **Consistency and customisation:** delivers repeatable results and can be tailored for various applications.
- **Ideal for complex parts:** perfect for surface finishing intricate geometries without damaging these.
- **Cost-effective and durable:** proudly manufactured in Britain for long-term reliability and efficiency.
- **Reduced manual effort:** automated system to minimise labour-intensive work.

ActOn Finishing invites manufacturers to experience the capabilities of the ADF Drag Finishing Machine through free finishing trials. For more information, visit ***www.acton-finishing.co.uk*** or email ***sales@acton-finishing.co.uk***

About ActOn Finishing. With 60 years of experience in the finishing industry, ActOn Finishing is a UK-based specialist in surface finishing technology. The company offers a comprehensive range of machinery, consumables and subcontract services, providing innovative solutions to enhance manufacturing processes worldwide.

ActOn Finishing Ltd
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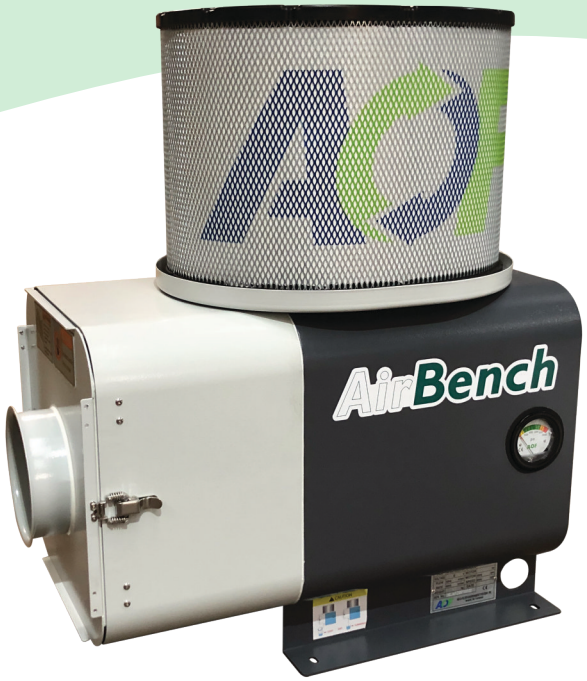
- ***Compact*** space saving design.
- ***High Efficiency*** final filtration to meet HSE guidance
- ***Installation Kit*** supplied with every machine including flexible ducting and machine inlet.
- ***Full Installation*** service available.



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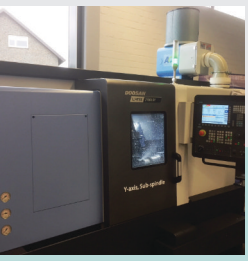



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- ***High Volume*** mist filter system for continuous production.
- ***Multi-machine*** installations or dedicated filtration for larger machine tools
- ***Low Energy*** through the use of high efficiency fans.
- ***Filtration Options*** specified to suit your machine tool and coolant.
- ***Full Installation*** service available.

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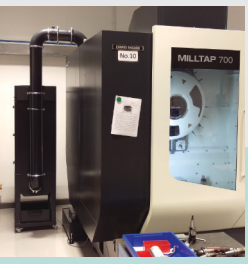




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