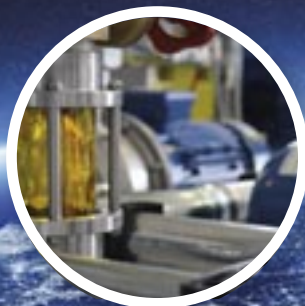


ADVANCED GRINDING SOLUTIONS

The Best of Europe's Grinding
and Finishing Products
From One UK Supplier



www.advancedgrindingsolutions.co.uk



Advanced Grinding Solutions is at the forefront of supplying the most advanced technology to the UK and Ireland's engineering industries and our range of high precision machinery is drawn from Europe's leading machine tool manufacturers and incorporates the latest technological advances in machine tool design and process development.

Our UK team backed by over 1,500 engineers from our major European Principals provides the highest possible level of technical support and we have an award-winning reputation for our proven ability to provide the most innovative and cost effective turn-key production solutions. We have references from every major manufacturing sector and industry relies upon us to deliver the best production solutions.

Each of our Principals is a true leader in their chosen field with their machines bringing enormous advantages to our end-users and keeping them ahead of the game.

Rollomatic have pioneered the use of 6-axis grinding machines for creating perfect geometry on cutting tools and also invented the peel grinding method used on their NP machines for grinding cutting tool blanks. The unique hybrid design of Rollomatic's new 660XW grinding machine combines, for the first time, the power and performance of a blank prep cylindrical grinder with the flexibility of a multi axis tool grinder to allow for all machining operations to be carried out in one single automatic operation on the same machine.

Tschudin holds numerous patents on its centerless grinding machines that bring enormous quality and safety advantages and Comat filtration systems filter oil based coolants to the finest degree possible without needing expensive filter candles or cartridges. These are just a few examples of the high-level innovations made by our Principals when designing their class leading products.

Here at AGS we do not sell machines; we provide complete solutions; the very best solutions that ensure increased productivity and superior workpiece quality. AGS is your partner for providing truly innovative, economical, efficient, and world class forward thinking solutions to give you the crucial competitive advantages that you need.





Tschudin, one of the greatest names in grinding, continues to explore new advances in centerless grinding technology.

All machines benefit from Tschudin's **patented W-Axis** whereby **the workrest blade is mounted onto its own CNC axis**. This allows components to be safely and easily loaded onto the workrest blade outside of the machining zone. This means that operators can safely hand load parts and another benefit is that should a part not be loaded correctly, and falls off the work rest blade, it does so outside of the grinding wheels where it cannot cause any damage.

Tschudin's Proline series benefits further from **another patented feature** – a fourth CNC Y-axis that moves the regulating wheel vertically in order to **remove the need for an operator to adjust the workrest blade height** to keep the grinding geometry consistent as the grinding wheel wears. As this innovative feature is linked to the CNC programme, the regulating wheel height is moved automatically. **Natural granite machine** beds offer maximum thermal stability and the Tschudin 600 machine will plunge grind 500mm long parts with a diameter of up to 250mm, weighs 24 tons, and has an axis resolution of only 0.1µm.



The **Tschudin Cube machine offers class-leading ergonomics thanks to its revolutionary and very radical design** and will grind parts from 0.1mm to 20mm in diameter and can plunge grind components up to 205mm long. Many other options are available for these machines to bring process advantages to end-users including high pressure wheel cleaning devices, grinding spindles made from invar to further reduce thermal influence, programmable CNC coolant delivery systems and ultra-precise linear slides.

The Tschudin cube is claimed to be the **world's easiest and fastest centerless grinding machine to set up as the grinding and regulating wheels can be changed in just 6 minutes**.



HandlingTech
Automations-Systeme



Automation is now a must for the vast majority of applications and indeed most of the machines we sell are fully automated. Our automation providers **HandlingTech (HT)** are technical specialists in supplying automation solutions for all manufacturing processes.

It's important to add value to automated systems and HTs machine tool loading solutions combine many disciplines apart from simply loading and unloading machine tools including automatic gauging, de-burring, washing, drilling, inspection, assembly and testing and their high standards of quality, flexibility and innovation guarantees optimum automation solutions. Various solutions are offered including Robax robot based loaders.



Fanuc or Staubli 6-axis robots are used for **handling parts from 1g up to 700 Kg in weight**. These are very versatile systems and are suited for loading a huge variety of machines of all types and applications. Various component storage solutions are available including the use of pallets, conveyors, rotary tables, data matrix code reader/writers and special one-off solutions.



Rollomatic is a market leading manufacturer of **high precision CNC machines for the production grinding of cutting tools and the laser machining of ultra-hard materials** such as PCD, CVD and CBN.

The GrindSmart® series is equipped with the latest linear motor technology producing enhanced surface finishes and reducing maintenance costs.

The 5-axis 530 machines and best-selling 6-axis 630 models **grind cutting tools to the highest possible precision** with great repeatability. The 630 machine provides improved accuracy on ball nose end mills or corner radii as the contact point of the grinding wheel remains constant over the entire grinding path.

For Tool measurement, a touch probe and a non-contact laser system for unattended production enables these machines to offer an unparalleled productivity rate.

The machine's benefit from a small footprint and can automatically load 20mm diameter tools in just 8 seconds. 1,360 tools can be stored in pallets **for unmanned running over entire shifts**. The ultra-compact wheel changer, with a capacity of up to 24 grinding wheels, allows for changes (with coolant pipes) during the tool load/unload cycle to improve productivity.

GrindSmart® machines are delivered with the complete VirtualGrind®Pro software offering unlimited programming solutions with **free software updates**. This powerful and flexible software is user-friendly and operators can quickly programme all types of standard or special cutting tools.

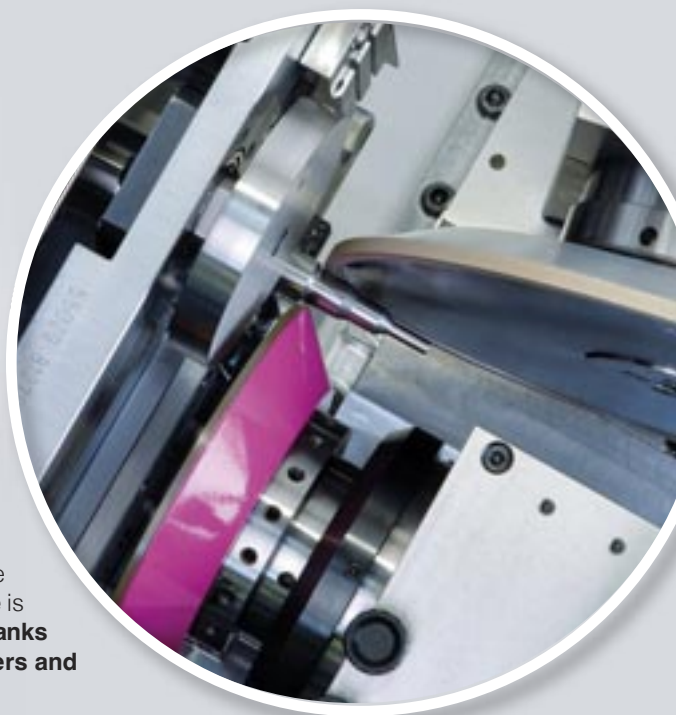


The new **LaserSmart Femto 510 machine** offers cutting speeds of up to **500% faster than conventional laser machining**. The laser machining process is superior to any traditional method of machining super-hard materials such as PCD and CVD diamond and **creates razor-sharp cutting edges with a radius of under 1µm**. This advanced machine creates **perfect mirror finishes of around 0.06µm Ra** on cutting tools from 0.1mm in diameter upwards. The Femto Ultra Short Pulse Laser introduces no heat to cutting tools.

Uniquely, a programmable defined cutting edge facility offers total freedom and flexibility to enhance your cutting tool's performance and the ability to machine chip breakers ensures perfect surface finish quality.

NEXTAGE® the Next-Generation Industrial Robot is a new type of humanoid industrial robot that, thanks to its human-like frame, can easily be placed where a person used to stand and perform tasks in locations that are difficult for traditional robots. It uses its head and two arms, equipped with cameras, to take over tedious, dangerous or repetitive tasks; allowing workers to focus on areas that require creativity.





Rollomatic's ShapeSmart® machines are designed for grinding tool blanks and are based on the method of peel grinding; a technology invented by Rollomatic. This new generation of **cylindrical grinding machine** has been improved to offer more advantages for fast setups and superior grinding quality including both rough and finish grinding in a single automatic operation for tools up to 25mm in dia. **The 4-axis NP30 machine** is a precision pinch and peel grinding machine for **producing cutting tool blanks** such as end mills, drills and stepped tools and can also **grind steps, tapers and radii**. Options include a Marposs in-process gauging station and a camera for locating miniature coolant holes.

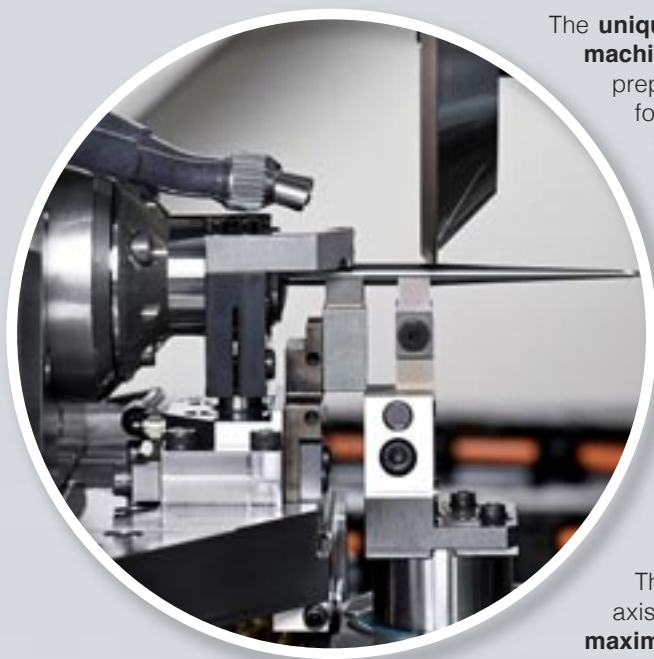
For special tools and punches, Rollomatic's 5-axis ShapeSmart®NP50 machine uses a patented method of peel grinding (US10207382): SmartPunch™. This innovative technique allows **the grinding of non-round shapes such as ellipses, squares, triangles or hexagons**.

The grinding machines benefit from Rollomatic's industry leading 3-year unlimited hours, parts and labour warranty and free-of-charge software updates for life.

The **unique hybrid design** of **Rollomatics new GrindSmart®660XW grinding machine** combines, for the first time, the power and performance of a blank prep cylindrical grinder with the flexibility of a multi axis tool grinder to allow for all machining operations to be carried in in one single automatic operation on the same machine and in one clamping. Therefore for the very first time cutting tools may be machined complete in a **highly efficient single grinding process**. Typical production efficiency from the traditional multi machine production method for standard end mills is in the region of 11% and this is increased to some 82% on the Rollomatic machine.

The machine features 4 linear and 2 rotary axis and the unique aspect is a special design of travelling workhead that's identical to that used on Rollomatics blank prep cylindrical grinding machines. The 660XW machine also comes with **all cutting tool software that's supplied free of charge** and is also updated free of charge for life as Rollomatics software department brings out regular updates for new tool geometries.

The machine features the latest linear and torque motor technology on each axis, as well as a 14kW synchronous spindle motor spindle that **ensures maximum grinding efficiency for all types of cutting tools from 0.1 to 12.7mm in diameter**. All these components are cooled with the same coolant oil providing perfect thermal stability, unbeatable accuracy in production as well as an extremely fine surface finish on the tools.





The range of **FLP fine grinding, lapping and polishing machines** includes for twin wheel - double sided CNC Lapping Machines and also single sided lapping machines. The size of machines ranges from smaller 400mm dia ones having three working stations up to the world's largest 100 ton 4-meter diameter monsters.

FLPs twin wheel fine grinding machines have wheels from 540mm up to large 1,300mm variants that weigh 16 tons. The monolithic portal construction of these machines using natural granite guarantees that the highest levels of surface quality and dimensional accuracy can be obtained along with the shortest possible process times.

FLP also offers used machines that have been **rebuilt to an as-new standard** as well as supplying replacement spare and wear parts for all similar machines. Regardless of the type and size of a customer's old machine – FLP can carry out process and technology orientated improvements and general overhauls for you.

FLP holds over £2.5million worth of **lapping consumables in stock** and offers end users the largest range of wear parts and consumables. This includes items such as lapping and polishing oils, fine silicon carbide, boron carbide, and special fused aluminium lapping powders and polishing fluids, Honing oils, Diamond sprays, suspensions, powders and pastes with micro-grains of various specifications and grades from 0.25µm up to 45µm.

FLPs final product line is the subcontract facility using their fully equipped factory work-shop that has a large variety of machines producing fine ground and lapped components. **FLP manufactures in excess of 15 million lapped parts a year for customers** needing a sub-contract facility.



Bahmuller produces internal, external and combined universal grinding machines of the very highest precision. Bahmuller is an industry leading machine tool manufacturer providing **turn-key production solutions** for the high-precision grinding of diesel injection units, hydraulic, turbo charger, valve train and other highly precise mass produced components.

For **pinion gears** Bahmuller has developed a solution with its **Qube** machine to grind both faces, and to also grind and hone the bore in the same production cell. For **bore grinding** Bahmuller offers a variety of solutions with grinding spindle speeds of up to **250,000 rpm** for grinding bores as small as 0.8mm in diameter. **Bores are ground to the highest precision** with roundness and straightness of 0.1µm and surface finishes of 0.3µm Rz.

Bahmullers **external grinders** have **grinding speeds of up to 150 m/s** using CBN technology or ceramic bonded diamond grinding wheels for the finest grinding tasks. **Pre-process, in-process and post process gauging** is available on their wide variety of production grinding machines.

Bahmuller also produces special **FEED loading devices** for its own and other machines and these can incorporate other processes such as marking, polishing, brush deburring, labelling, cleaning and assembly.

Many production engineers simply do not believe the output and precision that Bahmuller machines guarantee. Imagine grinding machines with not one but with up to 8 grinding spindles and **programmable axis increments of 0.1µm** and you will start to see the vision.





PLATIT are a leading manufacturer of **coating machines** using plasma generating PVD technology. Platit operate on a global basis and has supplied around 600 coating installations world-wide into no less than 38 different countries.

One of the main applications for the easy to use plug and play Platit coating machines is the coating of cutting tools (usually TiN, TiCN, CrTiN, etc). Sputtered Monoblock Coatings, TiXCo Nanocomposite coatings, BorAC-ARC Boron doped AlCrN coatings and SCiL-Coatings (SputteredCoating induced by LGD) and CCS (Custom Coating Solutions) are all available.

Profound competencies in cathodic **ARC, SPUTTER, HiPIMS and DLC technology** allows PLATIT to integrate these technologies into hybrid processes, creating solutions for different applications. PLATIT's **open-source philosophy** allows customers to adapt coatings to their specific requirements and individual needs. With the highest coating performance in dedicated application fields, PLATIT customers can differentiate themselves from the market standard.

PLATIT offers turnkey solutions including de-coating, edge pre-treatment, cleaning, post-treatment and quality control; making PLATIT systems ideally suited for seamless integration into the tool manufacturing and regrinding process **allowing cutting tool manufacturers to easily and cost efficiently coat their own tools instead of relying upon expensive and time consuming subcontract solutions.**



magnetfinish

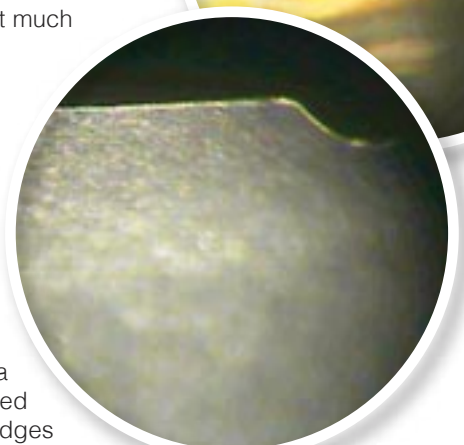
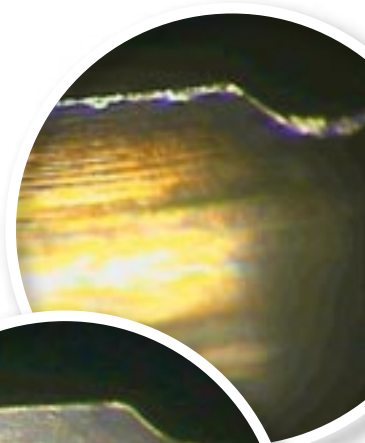
Magnetfinish is a remarkable process that was originally **developed to dramatically increase the performance and lifetime of cutting tools** that can last four times longer and be ran at much higher speeds after being Magnetfinished.

After being produced by a grinding process; **cutting tools can suffer from having jagged cutting edges with burrs.** These impact heavily upon the lifetime of cutting tools and affect their performance during heavy cutting. When milling, drilling or tapping at extreme speeds the resulting high temperatures that develop at the cutting edges are the main source for such problems as the tool becomes highly susceptible to wear. **The patented Magnetfinish technology addresses this problem.**

The Magnetfinish process polishes the flutes on HSS and Carbide tools and provides the perfect "edge honing" of the cutting edges and polishes profiles on taps and coated cutters. The polishing of the tools flutes results in a superior chip flow leading to increased productivity. The tools primary cutting edges are machined to **create a defined and reproducible radius of between 3µm and 50µm.**

The edge preparation process can vastly increase the lifetime of tools and allows more consistent machining results to be achieved. The processing times for tools is extremely fast with typical times being within 7 - 15 seconds.

Magnetfinish machines are also used within the medical and automotive industries where **critical components need to be burr-free** or to have a perfect re-producible chamfer on them.





Comat *filters*



Comat is a specialist manufacturer of high-quality filtration systems for the management of metal working cutting oil.

These super-filtration systems deliver $\leq 3\mu\text{m}$ filtration quality throughout the entire working cycle; maximising the quality of parts produced on machines whilst minimising lifetime running costs and maintaining coolant consistency. The systems are customised to meet specific needs allowing for maximum efficiency of the filtration process. **Oil is filtered to a better quality than new unused oil on Comat systems.**

The remote monitoring of the performance of their filtration systems from Comat's HQ ensures effective after sales support with systems monitored in real-time during manufacturing processes to ensure that the optimum filtration is always obtained.

Today, more than 20,000 machines use Comat Filter units, with more than 20,000,000 litres of metal working oil being super-filtered every day. Comat operates globally and have a 30-year history in developing the most advanced filtration systems.

Oil filtered by Comat units does not need to be replaced and users report that they have not changed the oil for up to 20 years (save top-ups due to oil loss). From small systems to support a single grinding machine up to centralised units that can cater for up to 12 grinding machines or 45 lathes; Comat have the solution for you.

Studies have shown that **Comat systems are considerably cheaper to run than other systems that use candles or a series of cartridge type filters whose running costs are up to 4 times greater.**



Krebs & Riedel is one of the leading German grinding wheel manufacturers with over 250 employees with distributors in 32 countries. The product range includes **conventional internal and external grinding wheels up to 900mm in diameter** manufactured using aluminium oxide and silicon carbide with ceramic and synthetic resin bonds for most industrial grinding applications.

Krebs & Riedel **Vitrified Diamond and CBN grinding wheels** with ceramic bonds have a working speed of up to 200m/s for internal, external and special grinding processes and new types of wheels with improved grain structures and novel bonding systems that optimise performance are being created.

One area where Krebs & Riedel excels in are wheels for **gear and thread grinding applications** to suit machines manufactured by Gleason-Pfauter, Oerlikon, Kapp-Niles, Hofler, Maag, Samputensili and Reishauer etc.

AGS has £100,000 worth of **wheels in-stock at our works in Coventry** that are held under Kan-Ban arrangements for our UK customers who can draw from that stock for instant supply. We also supply wheels for immediate drawdown by our customers that hold stock wheels at their works and pay upon their use; not upon supply.

Please contact us and we can discuss your grinding applications and can supply no-obligation free of charge test wheels for you to try out.



Advanced Grinding Solutions Ltd

Unit 80, Hotchkiss Way, Binley Industrial Estate
Coventry, West Midlands CV3 2RL

+44 (0) 2476 22 66 11

info@advancedgrindingsolutions.co.uk

www.advancedgrindingsolutions.co.uk



**ADVANCED GRINDING
SOLUTIONS**