

# Advanced Grinding Solutions at EMO

Advanced Grinding Solutions (AGS) whose line-up of high precision grinding and finishing machines is one of the widest available, will have staff present throughout the duration of the EMO exhibition with no less than eight of its machine manufacturing partners exhibiting on the following stands (all in **Hall 11**): Bahmuller (internal/external grinding machines) **Stand C21**, Tschudin (centreless grinding machines) and HandlingTech (auto loading systems) **Stand C15**, Gerber (deburring machines) **Stand E19**, FLP (lapping and fine grinding machines) **Stand E20** and Nova (external/internal grinding machines) stand D08. Additionally, Magnetfinish (deburring machines) are in **Hall 4** on **Stand E104** and finally Platit (coating machines) are in **Hall 5** on **Stand B60**.

Bahmuller will have technical specialists on hand throughout the show to discuss its range of high speed grinding machines that are widely used within the fuel injection and turbo charger industries. AGS currently has several Bahmuller grinding machines currently under build for a UK manufacturer of diesel injector systems.

Tschudin is showing its latest ecoLine 400 CNC centreless grinder with the new HandlingTech Lean Automation Plus machine loader. Key benefits for the customer are time saving, high autonomy due to a vertical component storage system and space saving as the automation is contained within the machines footprint. Tschudin will also exhibit its smaller 300 CNC ecoLine centreless grinding machine.

Gerber has developed a new high-performance brush-based deburring



Tschudin grinding of three parts at a time

system called "BS Power". The BS-Power high-performance machine has one or two planetary brush heads and can process and polish workpieces up to a diameter of 400 mm or both sides up to 180 mm evenly. It can be used for deburring very fine workpieces with a thickness of just 0.5 mm and does not generally hold on slits or holes down to a dimension of approx. 0.1 mm diameter. However, even larger parts, such as rotors, planetary gears or housings, can be deburred with this technology in a process-safe manner. The BS Power is designed to be powerful enough to remove heavy ridges from punched, lasered, milled,

turned or ground parts both quickly and reliably with good repeatability.

Magnetfinish is exhibiting its latest machine, the MF 63CR, for deburring rotary cutting tools, that comes equipped with a flexible robot cell for fast auto-load. This is mounted on rollers and can easily be moved. Pallets are stored in the robot cell and cutting tools are put in the pallets with their tips orientated upwards and standard OEM pallets from grinding machine manufacturers such as Rollomatic can be used so the tools can stay in their original pallets straight from the grinding machines. The maximum is 500 tools per pallet. New options within the robot based deburring cells include an ultrasonic washing bath and a drying station. Magnetfinish is a remarkable new process that has been



Bahmuller production grinding machine



MF63CR cutting tool deburring machine

developed to dramatically increase the performance and lifetime of all types of cutting tool. Many cutting tools can last over twice as long and be ran at much higher speeds and feeds after being processed using Magnetfinish technology. Abrasive powder is processed by magnets across the surface of the cutters with controlled but variable directions. The ground surfaces of cutting tools are polished to a roughness of 0.02 mm Ra. The outside edges and chip cutting edges are machined with a precisely defined and fully reproducible radius of between 3 and 50 µm. The flute polishing of cylindrical tools such as deep-hole drills or milling cutters gives a superior chip flow in production leading to a vastly improved productivity of the tools. The defined rounding of the cutting edges of tools avoids the running in phase thus extending tool life time. Tools that are coated are processed prior to coating to improve the adhesion of the coated layer.

The highlight on the FLP stand will be the high precision 840 double wheel lapping/fine grinding machine as sold to a major manufacturer of ceramic components. Apart from selling the highly precise lapping machines, FLP holds over £2.5 million worth of lapping consumables in stock and offers end users of all types of lapping machine the largest range of wear parts and consumables. Nova manufactures flexible CNC grinding machines that feature excellent accessibility for quick change-overs, serviceability and maximum up-time whilst providing the rigidity required for the most demanding of grinding applications. The range comprises

of internal, external, combined and special grinding machines as widely used by the bearing manufacturing industry.

PLATIT are a leading developer and manufacturer of highly advanced coating machines that are based on plasma generating PVD technology (Physical Vapour Deposition) and Platit offers complete turn-key coating solutions including all necessary peripheral equipment. Platit coating machines work on the Conventional Cathodic ARC principle and the revolutionary LARC® (Lateral Rotating Cathodes) and CERC® (Central Rotating Cathodes) technologies. These technologies are patented and are unique. PLATIT will highlight its 400 machine at EMO, which allows small to medium-sized cutting tool manufacturers to start up their own in-house coating facility. This machine has three lateral rotating door cathodes and, despite the lower investment costs, the machine can cope with practically all market coating grade requirements. The machines are delivered with the new pulsed lateral cathodes LARC®PLUS (Cr&Ti with 10 Hz). This new cathode system increases the deposition rate and extends the lifetime of the targets. Even for the future, the entry level machine is not a dead end and can be upgraded with many options including a DLC option which deposits a: C: H: Si layers using PECVD technology. The change in of a



Gerber deburring machine

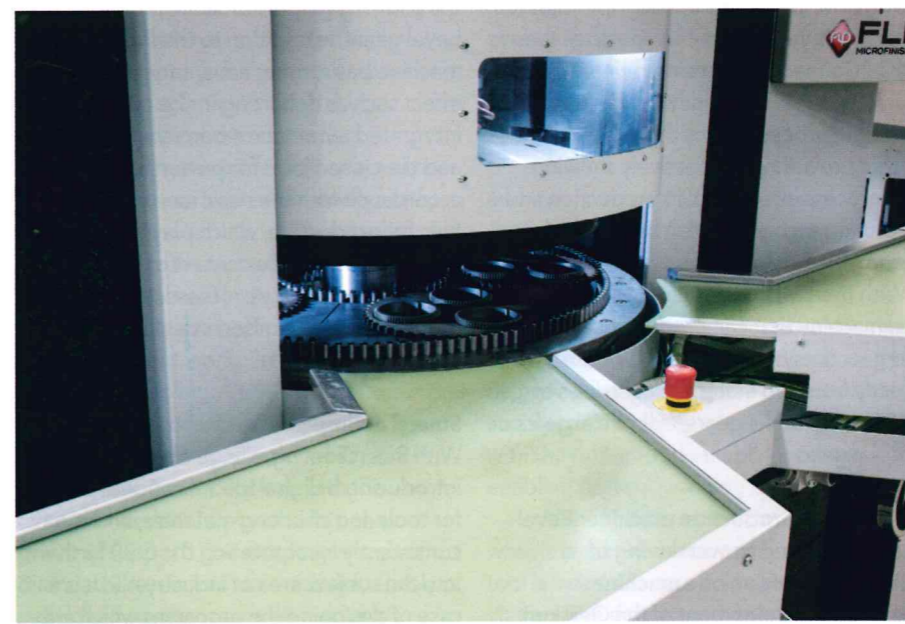
central ARC cathode (CERC® option, Central Rotating Cathode) in principle speeds up the deposition process since all four cathodes can coat at the same time. This ensures that the high productivity of this machine is at the forefront. All elements of the turbo upgrade are aimed at shortening the door-to-door time for coating parts. A special pre-heater additionally avoids the condensation on the chamber walls and the lightweight carousels reduce the body masses to be heated and respectively cooled. Platit's new LGD® (Lateral Glow Discharge) shields reduce the etching time and finally the new "Turbo" software upgrade further reduces production time by overlapping etching and heating.

As always, AGS looks forward to welcoming UK engineers at EMO and those visiting can book meetings in advance to avoid delays and to maximise their time at the world's largest machine tool show. AGS is expecting great interest in the Magnetfinish and Platit machines from cutting tool manufacturers, as this remains a key market here in the UK. AGS is also set to unveil a new partner company in this area shortly.

For those engineers not travelling to the EMO to see the latest grinding technology, they will get another opportunity to see machines on the AGS stand at next year's MACH 2018 exhibition, where no less than seven machines will be displayed.

To arrange meetings to see AGS's principals at EMO and to view and discuss the latest grinding technology, engineers are invited to contact AGS via the website [www.advancedgrindingsolutions.co.uk](http://www.advancedgrindingsolutions.co.uk) or by phoning 024 76 226611.

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FLP lapping machine