

Aerospace Report

AZ-Aerospace range

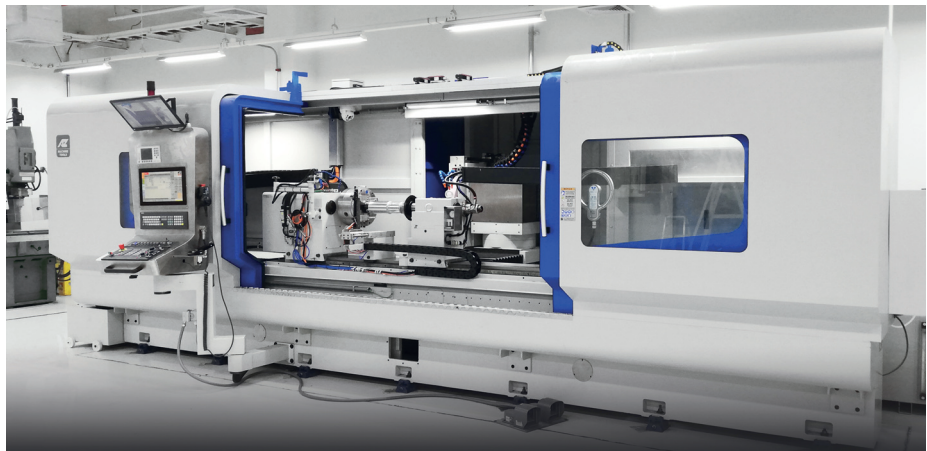
Global Full 4.0 grinding solutions

by Claudio Tacchella

The Italian company AZ Spa of Thiene (VI) is a leading player in the aerospace industry for the primary industries of aircrafts, EOM and RMO direct and indirect, with over 40 years of experience. The company designs and manufactures an impressive range of grinding solutions called AZ-Aerospace for the production, maintenance, repair and overhaul of aerospace components.

AZ Spa is also a pioneer in the current digital transformation process from an Industry 4.0 perspective. This is demonstrated by its innovative solutions adopted on machinery and services, which have made systems increasingly digital, more interconnected, more energy efficient and smarter. Digital solutions that the company specifies to be Full 4.0 and not simply Ready 4.0 are recognised in the market as an ideal example and model for modern Smart Factories.

"For us, it was immediately clear that it was not possible to avoid the Industry 4.0 revolution and that it would be reductive to adapt to it," says Sarah Pizzolato, marketing director of AZ Spa. "Our pragmatic vision led us to consider this transformation as a great opportunity for improvement. In fact, more and more of our clients production facilities are becoming fully interconnected environments where machines are able to self-learn with Artificial Intelligence (AI) technologies, devices that enable them, people and management systems to interact to create innovative and highly efficient products, services and working



The AZ-Aerospace range uses the most advanced mechatronic solutions, all customisable, highly energy efficient, safe, reliable and fully 4.0 compliant with industry requirements

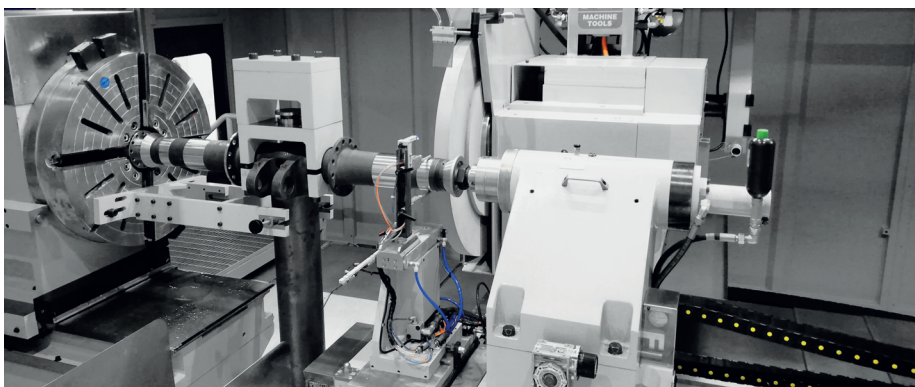
environments. Serving this world and managing its complex implications is the real challenge of the manufacturing industry that involves and excites our company."

Regarding machinery, the company has started an internal process of analysing and replacing numerous components in order to improve energy efficiency. For example, electrical/electronic parts, motors, drives, pumps, heat exchangers, exhausts fan and auxiliary accessories have been replaced with new state-of-the-art models. Additionally, each grinding machine is equipped with a panel where it is possible to display energy consumption in real-time or upload data collected from machine sensors onto a centralised system to monitor the entire plant.

Full 4.0 technical assistance and monitoring

AZ Spa offers a remote technical assistance service for grinding machines, which also includes an innovative technology called AZ-SmartService. Thanks to the use of Augmented Reality (AR), it allows customers all over the world to connect with AZ's technical support. Using special vision devices called AZ-SmartGlasses, AZ's technical support can see through the operator's eyes and provide precise instructions on the correct operation to be performed in real-time. This technology reduces human errors, the risk of identifying wrong spare parts and the delivery times of spare parts, costs and technical assistance times. The AZ-SmartService technical assistance service includes the AZ-SmartGlasses visor, in a pre-configured and ready-to-use kit, integrated with an easy preinstalled interface.

In addition, AZ Spa has implemented a new software on the grinders that makes them even more "Smart". For this purpose, it has researched and developed, in collaboration with the company IXON, a solution for monitoring and maintenance of machinery. With this new Cloud-managed software, AZ is able to constantly monitor the operation and performance of its own machinery, including predictive maintenance, through PC or Smartphone,



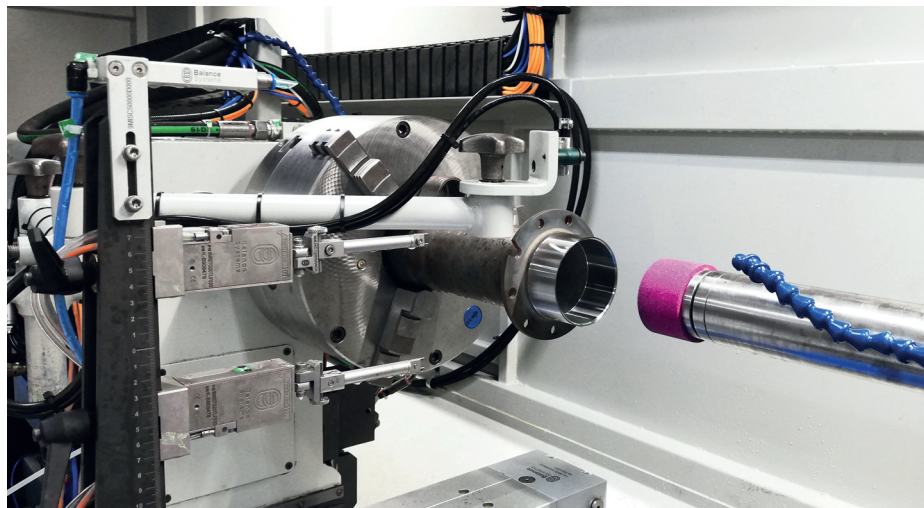
The range of AZ-Aerospace grinding machines is designed for the production, maintenance, repair and overhaul of aerospace components

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With AZ-SmartGlasses the operator can see notes and components highlighted by AZ with the help of Augmented Reality (AR)

ensuring optimal performance of the grinders. For example, AZ technicians can modify the operating parameters of the machines directly from the platform, integrating a web page from the PLC on the dashboard. In this way, it is possible to have weekly, monthly, quarterly and annual reports on the production performance of the plant. Furthermore, through data analysis, it is possible to carry out predictive maintenance of the machine components and generate customer notifications of the proximity of a maintenance event, thus promptly organising the intervention. This avoids or drastically reduces emergency situations and, consequently, the unplanned shutdown of production. Assisting the customer in managing highly specialised machinery such as AZ grinders, offering



Different wheelhead configurations are available for external and internal grinding processes

effective assistance services and tools, is essential.

For AZ, supporting the customer with maximum performance is an essential

condition from the delivery of the machine itself. It is necessary to be able to monitor and intervene at any time to ensure, for example, that the geometries and grinding processes adopted are consistent with the required specifications, especially in the case of machines that can be re-equipped for productions with configuration changes for the grinding of different batches of parts. Furthermore, AZ technicians must be able to intervene remotely, worldwide, in real-time and at any time, accessing historical data and monitoring notifications relating to important machine events.

Sarah Pizzolato concludes: "All these AZ innovations in the Full 4.0 perspective have

had an inevitable impact in terms of costs and resources to adapt machines, logistics and internal company organisation, but we are proud to have developed them to improve ourselves and contribute to technological progress. Today, with the implementation of our digital solutions, even the aerospace sector can benefit from the innovations brought by our grinding machines and grinding solutions that we produce."

AZ Spa will be exhibiting at the CIMT China International Machine Tools Show fair in Beijing, April 10th-15th, in Hall W3, stand A015, where AZ engineers are available to explain all the technical features and provide all information on the new AZ-Aerospace range.

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The digital AZ innovations in the Full 4.0 perspective are the best solutions for monitoring and maintenance of machinery