

# Integration

## Digital transformation accelerates efficiency at RONDOT GROUP plants

Across modern glass manufacturing, RONDOT GROUP integrates automation, data and advanced engineering to improve safety, efficiency and sustainability. From robotic swabbing to precision cooling and coating innovations, its connected technologies enable glassmakers to optimise processes, reduce risk, enhance quality and meet evolving demands – whether they be environmental or operational.



### PROTECTING WORKERS, EQUIPMENT AND RELIABILITY

As artificial intelligence reshapes glass container manufacturing, embedding digitalisation and automation across the hot end has become essential. With 9 interconnected brands, (Rondot, Graphoidal, Quantum, LWN, Novaxion, Pennine, Ramsey,

Sheppee and Sonicam), Rondot Group integrates technology, expertise and processes to support plant upgrades, equipment repurposing and the replacement of legacy systems. Automation, precision handling and connected systems are reducing operator exposure while strengthening process control. Safety is engineered throughout the hot end, from spraying

and swabbing to conveying and ware handling. Continuous monitoring via 24/7 connected servers, combined with robotic swabbing, enables early fault detection and more stable operations. At BA Glass in Spain, the Novaxion Blank & BlowSide robot demonstrates this approach in practice. Automating the blank & mould side, it optimises lubricant use, improves the Pack-to-Melt ratio and enhances safety by removing operators from high-risk zones. With manual intervention minimised, operators can focus on process optimisation and defect reduction without the disruption of section jams linked to delayed swabbing.

### OPTIMISED EFFICIENCY FROM FORMING TO FINISHING

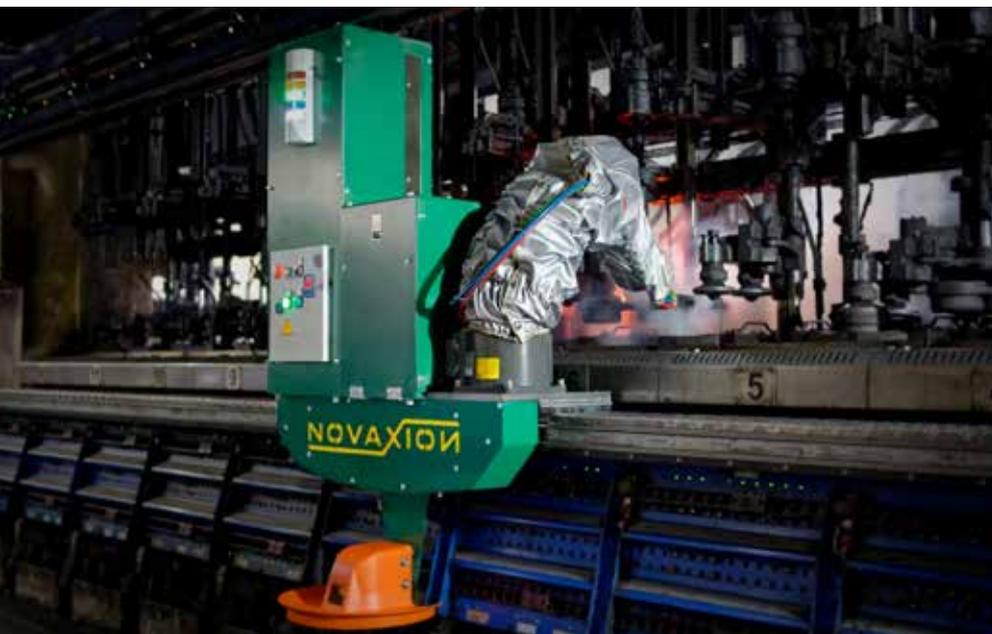
Close collaboration with customers underpins the development of increasingly efficient solutions. Through the digitisation of processes, data and insights, performance improvements become measurable and repeatable. Advanced measurement equipment ensures continuous monitoring and control, while live data management enables precise adjustments, reduced variability and consistent product quality. Future gains are expected from the integration of LWN and Novaxion technologies. By capturing real-time data directly at the mould through swabbing systems, operating conditions can be more accurately assessed. This information can then inform LWN cooling systems, enabling

precise regulation of airflow. Moving beyond fixed settings to data-driven cooling strategies allows significantly greater control over forming conditions. Efficiency gains extend further through Sheppee's hot ware handling solutions. Ongoing development has produced integrated offerings capable of addressing a wide range of container-handling requirements, supporting overall production line performance.

### REDUCING ENVIRONMENTAL IMPACT AND SUPPORTING ESG GOALS

Environmental performance remains a central focus. ISO 14001 certification at one Group entity marks an important step in establishing environmental management standards, while ISO 9001 certifications across multiple sites reinforce efficient, high-quality processes that help minimise waste. Eco-design principles are embedded early in product development, ensuring sustainability is considered from the outset. Pennine has seen

four Skeleton products approved under the UK Green Channel programme, accelerating patent processes for environmentally beneficial innovations. Graphoidal has advanced its shear spray technology by refining spray patterns from wide dispersion to controlled precision. This enables effective cooling even when spray bars are positioned further from shear blades than ideal, reducing unintended cooling of surrounding components and lowering the risk of gob contamination - supporting more sustainable production. This precision extends to the cold end with Graphoidal's Advanced Dosing Unit. Designed for One-Step coating application, it removes the need for separate hot-end coating processes. Fully automated dosing, adjustable ratios and the ability to switch between application modes provide flexibility across production requirements. Enhanced mixing, precise control and remote monitoring capabilities deliver a comprehensive solution for performance tracking and optimisation. ■



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