

Robotics and automation: STUDIO 1 and the journey from 4.0 to 5.0



THE FUTURE OF GLASS PRODUCTION IS NOW

As the industrial landscape is being reshaped by the seamless integration of robotics and automation, a new era of manufacturing is now upon us in which technology, sustainability and human safety all converge. At the heart of that evolu-

tion lies the Smart Factory -an environment aligned with Industry 4.0 that's fast evolving into 5.0- built upon key enabling technologies (KET) that drive innovation, efficiency and competitive edge. These advanced systems not only prioritize operator safety and user-friendliness. They also champion environmental responsibil-

ity and energy efficiency. Smart factories are no longer mere abstract concepts. They are becoming tangible realities through integrated solutions born from deep R&D investment. These enhancements inject vitality into the entire production ecosystem, ensuring swift, clear and real-time interconnectivity across all company assets.

REDUCING CYCLE TIME WITH LEAN MANUFACTURING

Lean production has become a cornerstone for improving efficiency. Through automation, operations achieve continuous high-speed performance without interruption. This leads to significantly increased output volumes, reduced cycle times and consistently higher yields.



Exploring the sharp rise of the Smart Factory in the glass industry, STUDIO 1 signals today's transition from Industry 4.0 to 5.0. With automation, robotics and sustainability at its core, its new production model is delivering efficiency, precision and safety as the company reshapes how glass is being manufactured.

est advantages is its ability to deliver precision and repeatability. Processes become highly reliable, ensuring every product meets consistent quality standards - regardless of scale.

OPTIMIZING SPACE AND RESOURCES

Automating production lines can significantly reduce the required workspace, freeing up valuable

MINIMIZING WASTE, MAXIMIZING QUALITY

Automation virtually eliminates the need for manual handling, thereby enhancing the overall quality of the finished product and minimizing breakage. As a result, waste disposal costs are lowered and operators are spared from repetitive heavy-duty tasks that could cause long-term harm.

DRIVING DOWN PRODUCTION COSTS

While automation requires an initial investment, the return on investment (ROI) is swift. Higher production

speeds and optimized processes directly contribute to reduced costs for the final product, creating measurable financial benefits.

MEETING MARKET DEMANDS

Lower production costs and shorter delivery times naturally attract more customers. Automation ensures peak performance at minimal expense - enhancing customer satisfaction and expanding market reach.

ENSURING BETTER WORKPLACE SAFETY

Automation significantly elevates workplace safety by relocating workers to super-



visory roles and eliminating exposure to hazardous tasks. Safety features such as shields and acoustic or light barriers further protect operators from potential harm.

CONSISTENCY AND PRECISION

One of automation's strong-

floor area for other functions. A detailed technical analysis of the facility layout enables optimal use of space while minimizing energy and resource consumption - air, water and logistics included. Careful planning also enhances internal logistics and im-





proves alignment with external dispatch operations, cutting down on unnecessary movements and further reducing energy demands.

A COLLABORATIVE APPROACH TO INNOVATION

The strength of Studio 1 lies in close collaboration with customers, merging its

technical know-how with hands-on production experience. This synergy allows the company to design custom equipment and complete plants tailored to the

following objectives:

- Optimization of existing processes
- New product and process development
- Boosting production capacity
- Automation across production phases
- Enhanced logistics
- Technical assistance and spare parts
- Staff training and upskilling
- Remote collaboration capabilities
- Integrated engineering support

In sum, the future of glass production is automated, intelligent and sustainable. And it's already here.



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