Flow

OMRON

CUSTOMER SUCCESS STORY

Flow Waterjet Delivers Faster, More Accurate Shape Cutting Solutions with OMRON Automation

STATISTICS

TRAVERSING/TRAVEL SPEEDS INCREASED BY OVER 200%

POSITIONAL ACCURACY IMPROVED

INSTALLATION TIME REDUCED BY 20-50%

Key Benefits

1. Enhanced precision and efficiency
2. Reduced installation time
3. Faster time to production
4. Faster ROI
5. Expanded market reach

At a Glance

In the world of industrial shape cutting machines, precision, efficiency, and flexibility are paramount. Flow Waterjet, a leading manufacturer of shape cutting machines, recognized the need to enhance their offerings to meet evolving demands. To achieve this, they sought a partner with cutting-edge automation solutions and expertise. They found that partner in OMRON Automation, a trusted provider of advanced motion control and automation technologies. Through this collaboration, Flow Waterjet was able to revolutionize their shape cutting machines, delivering unprecedented precision, reduced commissioning time, and updated functional safety.

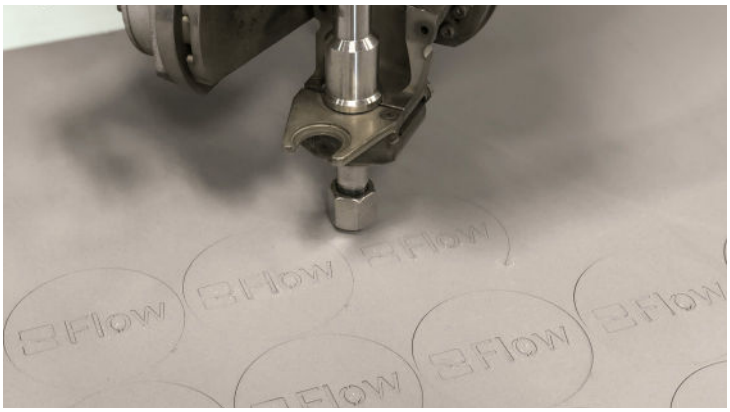
Flow Waterjet's shape cutting machines deliver unprecedented precision and efficiency, reduce commissioning time, and enhance safety.

The Challenge

Flow Waterjet's primary challenge in enhancing their shape cutting machines was meeting the rising demand for both precision and flexibility. Customers required greater accuracy and the capability to cut a diverse range of materials. They aimed to provide a high-speed option that allowed customers to cut soft goods with water-only at a faster rate – the Mach 200s.

Another challenge was accommodating customers who required a waterjet in a clean environment, such as precision machine shops or educational facilities. To meet this demand, Flow Waterjet needed to develop a fully enclosed version of their machine, known as the EchoJet.

Other challenges Flow Waterjet encountered was the time-consuming and complex commissioning process. They aimed to reduce the commissioning time of their machines to enable faster deployment and increased



productivity. Streamlining the commissioning process was crucial to meet the evolving demands of their customers, maintain a competitive edge in the market and shorten the time of ROI.

Additionally, Flow Waterjet recognized the significance of enhancing the safety features of their machines. They understood the importance of providing a secure operating environment for operators and ensuring compliance with updated functional safety standards. Adding advanced safety features to their machines was a priority to protect both the operators and the machines themselves.

The Solution

To address the challenges, the company partnered with OMRON Automation to expand their technology. With OMRON's PMAC (Programmable Multi-Axis Controller) platform at the core of the solution, the servo drives, motors and advanced safety system were seamlessly integrated. This solution seamlessly integrated into Flow Waterjet's machines, enabling precise control, efficient operation, and enhanced performance.

By incorporating OMRON's advanced motion control technology, Flow Waterjet was able to achieve unprecedented precision and efficiency in their machines. The PMAC controller provided state-of-the-art motion control capability, ensuring accurate and smooth movements. Advanced servo drive tuning provided positional accuracy and motion stability over the broadest spectrum of cutting speeds. The new architecture offers reliable and precise control over the machine's movements, further enhancing the overall performance.

In addition to motion control, OMRON's solution included a safety controller. These components ensured the safety of the operators and the machine itself, meeting the stringent requirements of the industry. The safety controller monitored and controlled the machine's operation, minimizing potential hazards.

Furthermore, OMRON's engineering expertise played a crucial role in the successful integration of their solution into Flow Waterjet's machines. The OMRON team worked closely with Flow Waterjet to understand their specific requirements and challenges, providing tailored solutions and support throughout the process. This collaboration resulted in a seamless integration of OMRON's technologies into Flow Waterjet's machines, delivering the desired precision, efficiency, and flexibility.

The Benefits

One of the major achievements was the significant increase in accuracy. By leveraging OMRON's advanced motion control technology and servo solution, Flow Waterjet achieved precise control over the machine's movements. Flow was able to more than double cutting speeds while maintaining or improving positional accuracy. The new system architecture resulted in improved performance and greater customer satisfaction. The PMAC architecture accommodates multiple machine configurations. The flexibility of the PMAC allows customization for special user needs beyond the standard products.

Another key benefit was the reduced commissioning time. With the integration of OMRON technologies, the commissioning time was greatly reduced, saving valuable resources and allowing the machines to be put into production faster. This accelerated deployment enabled customers to start utilizing the machines more quickly and efficiently, boosting productivity and decreasing time-to-market.

Furthermore, OMRON added a significant layer of safety to Flow Waterjet's machines. The safety controller monitored and controlled the machine's operation, minimizing potential hazards and ensuring the well-being of the operators. These benefits collectively contributed to the overall success and customer satisfaction of Flow Waterjet's enhanced shape cutting machines.

Future Opportunities

Building on their successful collaboration, Flow Waterjet is exploring future opportunities to further enhance their machines. They have plans to launch another new system, expanding their product offerings. Additionally, they are working on the development of a Rotary Indexer (6th-axis) option and new Ultra-High Pressure pump models. These future opportunities will provide customers with even more advanced capabilities, allowing them to tackle a wider range of cutting applications. By continuously innovating and pushing the boundaries of shape cutting technology, Flow Waterjet will undoubtedly maintain their position as industry leaders.

Conclusion

The collaboration between Flow Waterjet and OMRON Automation resulted in a transformative enhancement of shape cutting machines. By integrating OMRON Automation's cutting-edge solution, Flow Waterjet overcame their challenges and achieved unprecedented precision and efficiency. The machines offered increased flexibility, faster cutting speeds, reduced commissioning costs and added safety. These advancements not only positioned Flow Waterjet competitively in the market but also impressed customers with innovative solutions. With future opportunities on the horizon, Flow Waterjet is poised to continue evolving the industry and setting new standards for shape cutting machines.

ABOUT FLOW WATERJET

Flow's roots date back to the early 1970s, when former research and development scientists from Boeing founded Flow Research. The first technology commercialized by Flow Research was the use of an UHP waterjet as an industrial cutting tool. Soon after, we invented, patented, and perfected the world's first abrasive waterjet system.

Since 1974, Flow has delivered over 15,000 waterjet and abrasive waterjet systems to customers in more than 100 countries.

Flow 50 YEARS OF FLOW

Learn more about the company

Empowering People Through Automation

OMRON Corporation is a global leader in the field of automation based on its core technology of "Sensing & Control + Think". OMRON's business fields range from industrial automation and electronic components to social systems, healthcare, and environmental solutions. Established in 1933, OMRON has about 29,000 employees worldwide working to provide products and services in around 120 countries and regions.

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