Robotic Automation can supercharge an Investment Casting Company's competitive position

By Roberta Zald and Steve Laski, KMT Robotic Solutions, Inc.

Every year those of us in Manufacturing feel the pressure to improve our approach to business and step up our competitive position. We have learned that standing still is the same as going backwards in these challenging economic times, especially with the increased globalization of every business. Historically the justification for automation has been based almost exclusively upon hours of labor saved versus the cost of the equipment. While it is true that often the outcome of implementing automation is to create more productivity with a reduced level of staff per part, there are many other factors that can be considered when justifying automation. This article proposes that including Robotic Automation in your approach to the manufacture of investment castings can significantly impact many aspects of your business, not just your labor cost per piece. It can significantly impact your relationship with your customers, your employees, and the environment.

To clarify for the purposes of this article, Automation for an investment casting company might include one or many of the following processes, all of which have viable solutions utilizing today's available automation technologies; Wax casting, Wax assembly, Dipping/Shell building, Pouring, De-coring & Cleaning, Cut-off, and Finishing/Grinding/Polishing.

Our premise is that flexible Robotic Automation assessed and implemented effectively can offer your company the opportunity to improve process throughput, have more reliable and repeatable processes, improve product quality and consistency, improve your relationships with customers, remove your employees from potentially hazardous jobs, reduce your company's environmental impact, and improve your financial results. Here are some ideas to consider as you think about the potential benefits of Robotic Automation to your operations.

Improved process throughput provides the opportunity to **shorten time to delivery**, providing the manufacturer with a competitive advantage over others, especially others that are overseas and need to ship by boat. Higher productivity can also add capacity to an existing facility, **delaying the need for additional capital equipment and facilities.**

Building a more capable workforce can lead to **higher job satisfaction**. The work required of the staff to support automation depends upon a higher level of training and capability, and a corresponding higher level of compensation and job satisfaction. Employees are no longer in menial jobs but rather are focused on improving the processes and products of the company.

Reliable and repeatable processes lead to better control of the manufacturing critical path, predictability and potentially reductions the manufacturing time in process, and more **reliable ship timing prediction**. It also leads to **more consistent high product quality**, enhancing the satisfaction of the customer and the competitiveness of the company.

More reliable ship timing helps the manufacturer and their customer manage their inventory levels, **reducing inventory carrying costs**.

Removing more employees from dirty and hazardous environments reduces insurance and health care risks and **enhances employee satisfaction and retention rates**.

Energy reduction and chemical usage reduction or even elimination can be achieved when efficient and effective automation processes are selected. These reductions **can reduce the cost of the process**, **are better for the Environment**, and **further enhance the manufacturer's competitiveness.**

The Flexibility provided by a programmable 6-axis device allows your company to add new products to your mix and make incremental process enhancements over time utilizing the same or slightly modified equipment. **Your lower cost to improve your processes and your flexibility to integrate additional products for manufacture** can also be a significant competitive advantage. Consider the value of this flexibility in managing the inevitable changes that will occur over time in your business.

Cost competitiveness and reduced time to system delivery are also attributes of today's Robotic Automation. Today's robots are very price competitive to buy due to their mass production, have a multitude of programming features that make them capable for a range of processes, and at least one major brand of robot available has Mean Time Between Failures (MTBF) that exceed 90,000 hours. This means that today's Robotic Automation can be **very price competitive against other types of automation** equipment and can **often be integrated and delivered in a system more quickly** than custom-built automation equipment.

This is a list of ideas only and certainly a close evaluation of your business and the potential impact that flexible Robotic Automation can have on your particular situation needs to be completed. Open your mind to the breadth of impact that flexible Robotic Automation can provide and then dig into those details and consult with the experts to build a plan that fits for your business. Reliable integrators of this technology are available. Consider how your business can be impacted by Automation and create a plan to supercharge your business!

Stephen J. Laski, Cleaning Product / Technology Manager

Steve is responsible for the conceptualizing of methods, process development and advancement of robotic cleaning technology for KMT Robotic Solutions, Inc. He has over 20 years experience with the use of high pressure water and other media for cleaning, deburring and de-coring of various parts and assemblies.

Roberta L. Zald, P.E. Director, Business Development

Roberta is responsible for market planning and marketing communications for KMT Robotic Solutions, Inc. She has over 30 years experience in manufacturing automation and enjoys working with customers to enhance their effective use of robotic automation to improve their competitive position.

KMT Robotic Solutions is the global leader in turnkey robotic Material Removal systems, specializing in 3D trimming, cutting and cleaning applications for plastics, composites, fabrics and metals.

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