

Engineers: Tap the Experts at Xebec to Design a More Efficient Machining Process

Say you're an engineer for an aerospace manufacturer and in charge of designing the manufacturing process for a specific part, such as landing gears, nose cones, tail sections or missile parts. You've got to consider the following factors into your flow process chart:

Pre-production work

- Material selection
- Machine selection
- Job costing
- Minimizing burr formation

Post-production work

- Deburring
- Finishing
- QA work and scrap

ROI calculations



Technology is changing rapidly and innovative tools are being introduced daily that could have a big impact on your design, such as deburring solutions from Xebec Deburring Technologies. Engineers should consult with the experts at Xebec **at the start of the design process** to help determine the best processes for the machining pre- and post-production work. This will deliver the best ROI given industry challenges like the labor shortage, supply chain issues and high customer expectations.

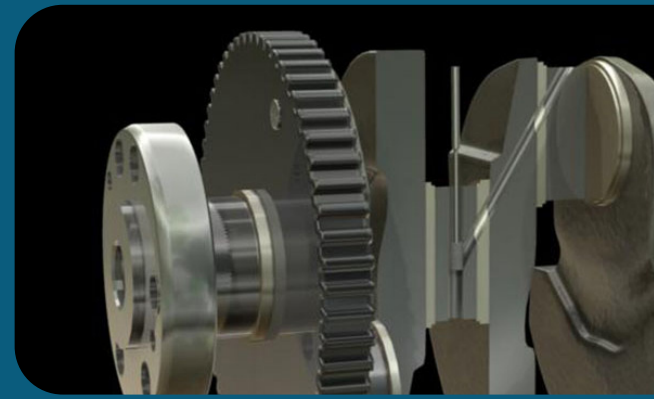
Material Selection

Each material type has characteristics that affect its workability and requirements for machining. Often, you have to work with a specified material, but knowing how the material reacts to machining is critical in the process design. For instance, titanium is a hard metal alloy that can be hard to machine, where aluminum does well in machining. Are you using the best tools on the right settings for the job? Or could you improve and get better results faster with less waste? And what happens when a new material enters your facility, such as a composite or plastic?

>> [Deburring Different Materials: Metal, Plastic and Beyond](#)

Machine Selection

Often, the machine you use is a matter of working with what you have. However, switching or upgrading to a different machine could make a sizeable difference for your operations and bottom line. For example, while CNC machines are popular in machining, a robotic arm might work a certain part more efficiently. And advanced manufacturing techniques like additive manufacturing are on the rise, accomplishing complex part production using less material.



>> [CNC vs. Robot: Which is Best for Your Deburring and Finishing Jobs?](#)

>> [Surface Finishing Developments in Additive Manufacturing: A Conversation from the Field](#)



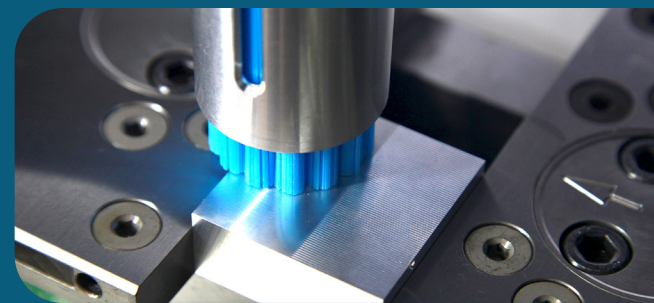
Job Costing

Costing has always been a challenge, but price fluctuations, inflation and wage increases are making it more difficult to pin down the best quote for each job. That is, unless you have a close eye on each component of the job costing process. If you can keep your costing reliable and provide more accurate quotes, you'll be more likely to win jobs and make a steady profit. But the components of job costing go beyond materials and labor. Running fewer parts in a job often means a higher cost per part, using sub-par tools could be costing you more than you realize and manual labor in post-production can be needlessly expensive and time-intensive.

>> [Job Costing for CNC Machining Centers: Challenges and Opportunities](#)

Minimizing Burrs

Removing all burrs is often necessary per a part's requirements to ensure proper performance in the part application. Engineers can design the manufacturing process in such a way that fewer burrs are produced at the outset, optimizing the entire machining process and reducing the amount of deburring required.



>> [Control Burrs before Deburring for Better, Faster Results](#)

Deburring and Finishing

Engineers have many options for deburring and finishing processes, from manual to mechanical, electrochemical or automated. Automating these processes with Xebec ceramic fiber brushes that act like cutting tools will mean you accomplish both steps in one, as the brush performs deburring and finishing at the same time – in significantly less time. This benefit goes straight to your bottom line, and it helps solve production headaches like needing more skilled labor, adapting to the importance of automation and improving your working environment for employees.



- >> [Deburring and Polishing: A One-Step Process with Xebec](#)
- >> [Modern Surface Finishing and Polishing Operations in Manufacturing](#)
- >> [3 Ways to Get Rid of Production Headaches with Automated Deburring and Finishing](#)



ROI

Finally, engineers are constantly working with their teams to ensure they're capturing profits and getting a measurable return on investment from the tools and resources they put into a job. Calculating that ROI involves as many factors as calculating job costs. If you're using manual processes for deburring and finishing and you calculate the ROI on that versus automated processes, your jaw might drop. Automating these processes leads to tremendous savings in both time and money, as well as opportunities to take more jobs and increase revenue potential.

- >> [How to Calculate the ROI on Automated Deburring with Xebec](#)
- >> [How a Slight Increase in Machine Cycle Time with Xebec Results in Major Savings in Net Production Time](#)

Contact us: Tell us a little bit about your application and any issues you may have and one of our experts will get back to you. We'll be happy to discuss how we can help you maximize productivity and quality, demonstrate what we can do, and guide you through the selection and implementation process until a successful test run is accomplished.