How to Calculate the ROI on Automated Deburring with Xebec

Deburring costs involve more than tools and labor, especially if you deburr manually. To calculate the true cost of your deburring processes, you must first understand all the costs – fixed and variable, known and unexpected.

Core Cost Factors

There are three common factors to base deburring costs on:

Labor Cost	**Manual =** Hourly Operator Salary, Workpieces Deburred per Hour **CNC =** Hourly Operator Salary and Time for Tool Change/Tool Offset, Number of Pieces Produced
Tool Cost	Total Tool Cost (automated or manual), Workpieces Produced per Tool
Machine Equipment Cost (Per-Piece Machine Depreciation Cost)	Hourly Machine Depreciation Cost, Workpieces Produced per Hour

Core Equations

Manual Deburring: Manual Labor Cost + Tool Cost

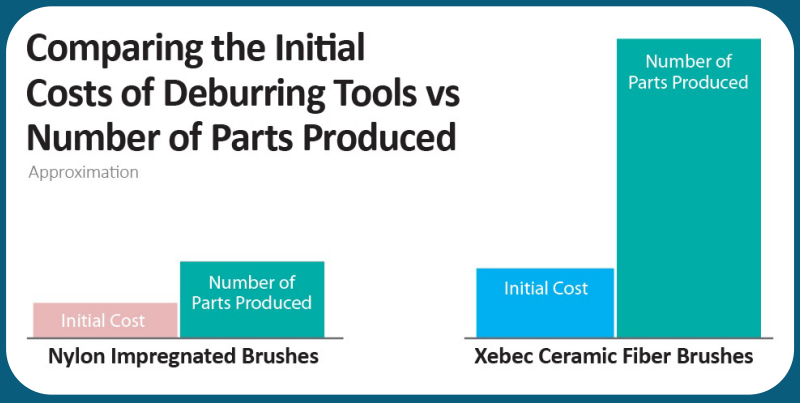
Automated Deburring: Labor Cost + Tool Cost + Machine Depreciation Cost

Cost Considerations

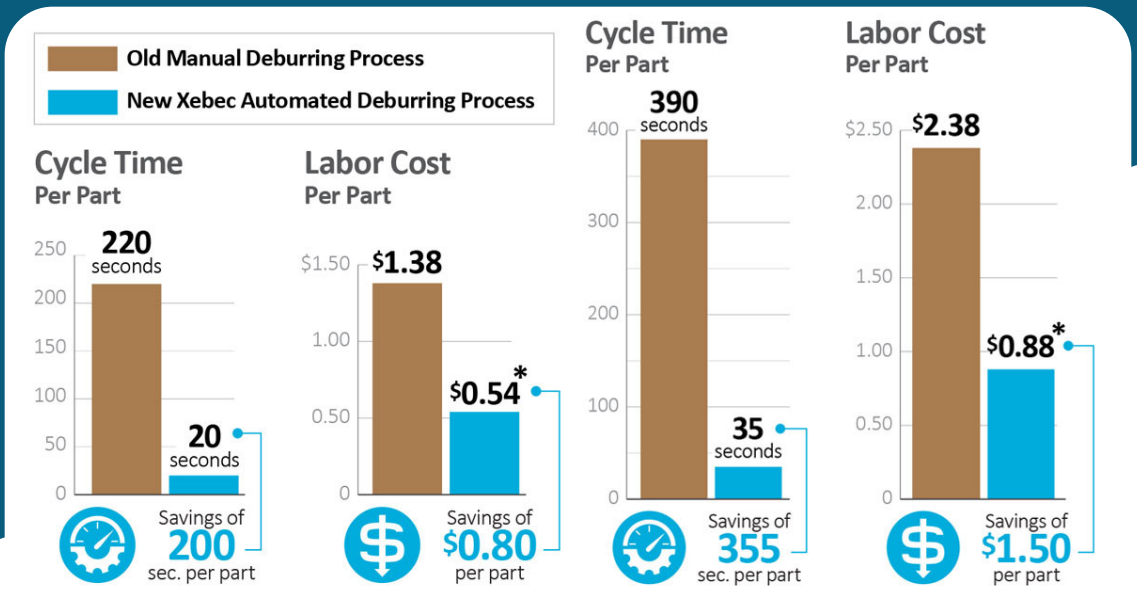
Tool Efficiency: Disposable deburring tools may seem less expensive compared to automated deburring brushes. But the cost of replacing disposable tools adds up – into the thousands. With quality automated tools such as Xebec ceramic fiber brushes – with the longest tool life on the market – you'll waste less and produce more.

Process Efficiency: Manual deburring is often more costly than automated deburring. It is unreliable and inconsistent, resulting in more scrap, rework and time-intensive quality control. It demands more labor time and wears on employees. Xebec ceramic fiber brushes perform both deburring and finishing at once, saving time and associated costs.

Capacity: Manual deburring limits production capacity as technicians can call off or get injured. Because of this, and challenges such as the labor shortage and supply chain issues, manufacturers have to let opportunities pass them by. With automated deburring, manufacturers can take on more jobs and optimize their production time and resources.



Reliability/Quality: Producing consistent quality parts is critical to saving money – by not wasting money – in your production. Consider the potential costs of rework, worker injury and low quality. Xebec ceramic fiber brushes produce consistent, high-quality results with greater reliability.



Situational Cost Factors

Many indirect factors can have a major impact on your production costs. Some examples worth consideration include the costs of:

- Parts returned due to unreliable quality.
- Workpieces scrapped when abrasive tool wears out before replacement.
- Time and resources spent on unexpected steps added after production, such as added finishing.
- Lost production time and revenue when not operating the CNC machine, such as when the operator is deburring.
- Lost production because the technician called in sick or you can't hire enough staff.
- Injuries and accidents due to fatigue and manual use of sharp tools.
- Purchasing and constantly replacing consumables, including shipping.