

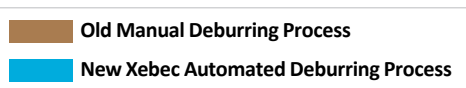
# How Automated Deburring Saved Over \$275,000

Moving from Manual Deburring Process to Automated Process with Xebec Brush™ Surface. Example from a Firearms Industry Customer Solution in June 2019.

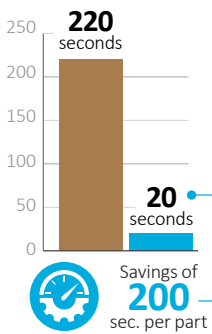
Wow, there we go again. At Xebec, we continue to help people with deburring problems become heroes in their own company. Check out this amazing cost savings example from the firearms industry.

Our customer was manually deburring the two parts shown in the calculations below. By switching to an automated process, utilizing a ceramic Xebec surface brush, they are looking at an estimated savings of over \$275k per year.

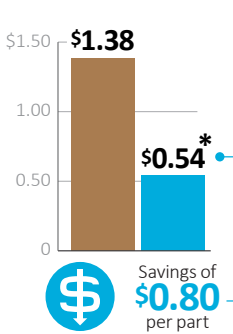
| Labor Cost  |                |
|---|----------------|
| Manual  | Machine        |
| <b>\$22/hr</b>  | <b>\$80/hr</b> |
| At first glance, manual deburring appears to cost less. |                |



Cycle Time Per Part



Labor Cost Per Part



### Example 1:

**Estimated annual cost savings of \$96,058**

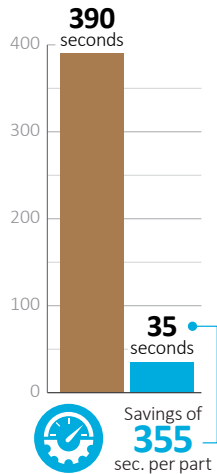
- Original manual deburring process had a cycle time of 220 seconds per part. With labor burden rates at \$22 per hour, that equates to \$1.34 in labor cost per part.
- New Xebec automated process has a cycle time of 20 seconds per part. With machine costs at \$80 per hour, that equates to just \$0.44 cost per piece. Add in the cost of the ceramic brush \$0.10 per piece (\$149.27 / 1500 pieces) and you have a total cost per piece of just \$0.54.
- Manual deburring \$1.34 per part – Xebec deburring \$0.54 per part = \$0.80 savings per part
- Customer is making 10,000 of these parts per month (120k per year).
- 120,000 pieces multiplied by \$0.80 per piece cost savings = \$96,058

**\*Cost includes all tool expenses.**

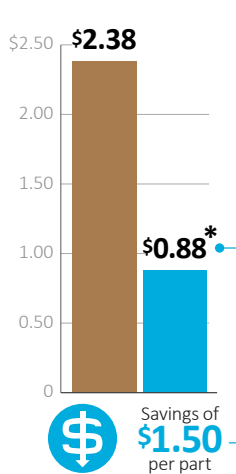
**Xebec 15mm Surface Brush: \$149.27 each**

Total Brush cost for 120,000 parts: \$11,941.60 or \$0.10/part

Cycle Time Per Part



Labor Cost Per Part



In addition to cost savings, part quality and consistency are greatly improved with the Xebec Brush.

### Example 2:

**Estimated annual cost savings of \$180,000**

- Original manual deburring process had a cycle time of 390 seconds per part. With labor burden rates at \$22 per hour, that equates to \$2.38 in labor cost per part.
- New Xebec automated process has a cycle time of 35 seconds per part. With machine costs at \$80 per hour, that equates to just \$0.78 cost per piece. Add in the cost of the ceramic brush \$0.10 per piece (\$149.27 / 1500 pieces) and you have a total cost per piece of just \$0.88.
- Manual deburring \$2.38 per part – Xebec deburring \$0.88 per part = \$1.50 savings per part
- Customer is making 10,000 of these parts per month (120k per year).
- 120,000 pieces multiplied by \$1.50 per piece cost savings = \$180,000

Xebec cost savings initiatives also assist with resource management. This initiative alone created a platform to reduce a group equivalent of six full time employees. Not only does this offer cost savings, but also gives the end user an opportunity to redeploy those valuable resources elsewhere.

In addition to cost savings, our ceramic fibers are second to none and ensure a consistent and greatly improved finish to their product. We are very proud of our product and our company and would love to help you be a hero in your company as well as we continue to help the resurgence of American manufacturing, by redefining perfection.

MORE XEBEC SUCCESSES from the

# Firearms Industry

EXAMPLE: SURFACE FINISHING - MILL

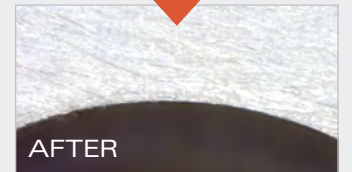
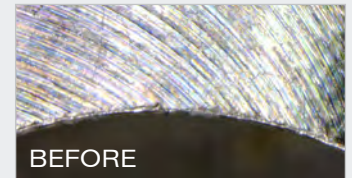
## Trigger Assembly

Deburring of edge radiuses and finishing of edges,  
Fine surface finishing of detailed parts

|                        |                            |
|------------------------|----------------------------|
| <b>Material</b>        | Stainless Steel            |
| <b>Process Details</b> | Detailed Surface Finishing |

**XEBEC product used: A11-CB06M**

Rotation Speed: 8100 RPM, Depth of Cut: 0.015 in, Feed: 40 IPM



EXAMPLE: BACK BURR CUTTER & PATH OPERATION - MILL

## Lower Receiver

Deburring and chamfering of multiple holes  
In a single pass

|                        |                                      |
|------------------------|--------------------------------------|
| <b>Material</b>        | Aluminum                             |
| <b>Process Details</b> | Hole Deburring & Back Burr Operation |

**XEBEC product used: XC-28-A**

Rotation Speed: 12500 RPM, Feed: 45 IPM



EXAMPLE: DETAILED FINISHING - HAND TOOL

## Handgun Frame

Fine surface finishing and polishing of milled surfaces;  
Deburring and polishing of edges

|                        |   |
|------------------------|---|
| <b>Material</b>        | Stainless Steel                             |
| <b>Process Details</b> | Edge Deburring & Detailed Surface Finishing |

**XEBEC product used: A31-EB06M**

Rotation Speed: 8000 RPM, Handheld Rotary Tool

