

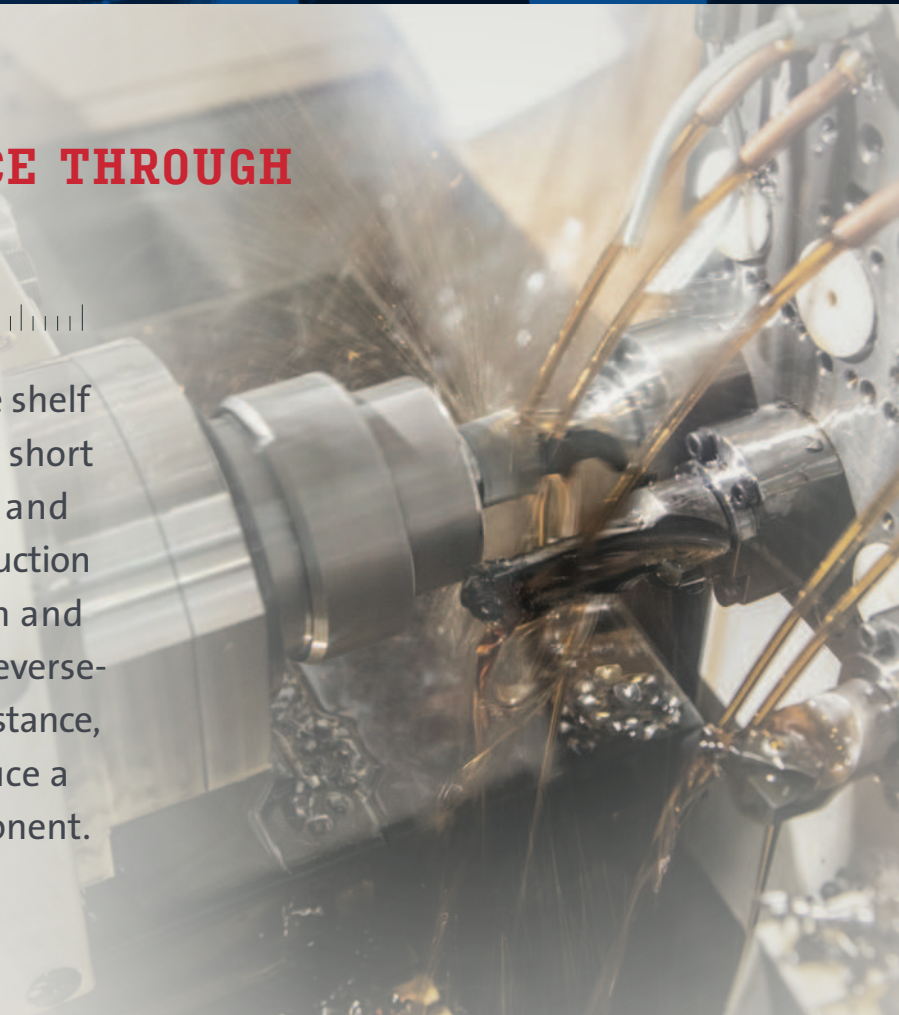


TOOL & MANUFACTURING

5005 County Rd. 29 ♦ Auburn, IN 46706  
o: 260.925.2128 w: www.rathburntool.com

## CUSTOMER SOLUTIONS: #38

# ENHANCING PERFORMANCE THROUGH REVERSE ENGINEERING.



Our customer had been using an off-the shelf spray nozzle component that had a very short life, causing the need to stop the line and change out the part after only a few production shifts. With no original documentation and not knowing the nozzle's material, we reverse-engineered the part, provided design assistance, and suggested a new material to produce a more efficient and longer-lasting component.

## ENHANCING PERFORMANCE AND EFFICIENCY THROUGH REVERSE ENGINEERING AND DESIGN.

Our customer had been using a spray nozzle component they bought off the shelf from a local distributor in their manufacturing process. But the component had a very short life—it only lasted a few production shifts before wearing out, causing the need to stop the line and change out the part. As a manufacturer in a fast-growing industry expected to see billion-dollar growth in the next three years, this inefficiency was costing time our customer could not afford to lose.

## MEETING OUR CUSTOMERS WHERE THEY ARE.

With no original documentation, drawings, or models for the part—and not knowing what material it was made of—the company was looking for a CNC precision machining company with the equipment and capabilities to recreate the part while improving its features and durability. Our commitment to deeply understanding our customers' technical needs enabled us to reverse engineer the component, provide design assistance, and suggest a material type for a more efficient and longer-lasting part.



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### WE APPLIED INGENUITY BASED ON EXPERIENCE.

Our Engineering staff and Technical Sales Representative worked with the customer’s Manufacturing Engineer to understand the current function of the piece and how they hoped to enhance it. Using a sample part provided by the customer, we captured the specs from the nozzle and reverse engineered the component, recreating the design while also incorporating improvements. Drawing on our knowledge of application of materials, we recommended a material type we felt would improve wearability considering the corrosive nature of material going through the nozzle.

### PARTNERING FOR PERFORMANCE.

We then went through the process of producing soft test prototypes. Working in partnership with the customer for feedback, we evolved those pieces into hard prototypes. Ultimately, we developed new final design specifications and were able to manufacture a batch of the new and improved nozzle for the customer. We provided these specs to the customer so they could have them on hand for any future product needs.

Our production team utilized our Citizen Swiss L32 CNC machine with D2 tool steel to create units 0.590” round by 0.4200” deep that required tolerances of +/- .002”. With the new material and designs, our customer only needs around 200 nozzles per year.

### DELIVERING WITH EFFICIENCY AND SPEED.

With just three weeks from purchase order to producing drawings and creating the first prototype, we were not only able to quickly provide our customer with custom components but also deliver them for a price comparable with their previous units. In actuality, the new parts improved the wearability of the previous nozzle by five times so the unit costs amortized over the life of the nozzles were significantly less than before. Plus, we helped reduce costly line stoppages in our customer’s manufacturing process. That’s what it’s like to partner with Rathburn.

*Visit our plant in Auburn, Indiana and see for yourself how for 35+ years, we’ve used the latest technology while applying ingenuity and consistent quality standards to produce an experience our customers call “hard to believe”.*

