

New Pressurized Flow Component Vastly Improves Fuel Pump Application

Additive Manufacturing Case Study

The problem:

A longtime Metalcraft Solutions customer faced a problem with a crucial piece of its fuel pump assembly.

This performance-critical, tube-shaped flow component included a disc that was produced separately and welded to the pipe. Unfortunately, the fuel flowing through the tube cavity was corroding the weld, leading to **higher than expected maintenance and repair requirements and raising the risk of failure.**



The solution:

To correct this problem, the customer decided it wanted to switch to a more homogenous, lightweight piece.

This particular part was being manufactured by a different supplier, so Metalcraft Solutions stepped in with a creative solution.

“We’ve been a customer of Metalcraft Solutions’ for several years and really value their advanced manufacturing knowledge and experience,” said the customer’s Engineering Manager.

The Metalcraft team immediately focused on developing a **one-piece, 3D printed solution**. It experimented with various materials and build orientations, and despite several engineering changes that altered the dimensions of the part, the material thickness and the final machining requirements, Metalcraft Solutions quickly developed a manufacturing solution after just a few iterations.



The result:

In the end, the customer received a far superior product that was less susceptible to corrosion and wouldn’t cause downtime for unexpected repairs.

The Metalcraft Solutions team’s responsiveness, flexibility and creativity went a long way in helping this customer improve.