KLEIN MARINE TOWED SONAR SYSTEM

MJF and Metal Jet 3D printing delivers a redesigned steerable towed sonar system to Klein Marine.

CHALLENGE

Klein Marine Systems needed to push the boundaries of underwater sonar mapping. Their existing towed sonar system required enhanced stability to optimize sonar image quality. The current manufacturing process lacked design flexibility, making on-demand design iterations time-consuming and costly, which slowed product development cycles.

SOLUTION

By leveraging Multi Jet Fusion (MJF) with PA 12 material, Endeavor 3D helped Klein Marine Systems redesign the system's active control surfaces, introducing a mechanism for attitude corrections to enhance sonar image clarity. Additionally, metal 3D-printed lever actuators, printed with 316L stainless steel, provided precise control for improved performance. The shift to 3D printing enabled rapid design iterations, accelerating the system's progression from prototype to production.

BENEFITS

1. Quick Design Iterations

Rapid prototyping made it possible to quickly test and refine multiple design versions, accelerating the transition from concept to small-volume production.

2. Enhanced Steerability

The redesigned active control systems and metal 3D-printed lever actuators enabled precise attitude corrections, significantly enhancing sonar imaging capabilities.

3. Durability for Harsh Environments

PA 12's high strength and resistance to water exposure ensured the system's components could withstand the demanding conditions of underwater operations.

AT A GLANCE

INDUSTRY

Maritime Transportation

TECHNOLOGY

Multi Jet Fusion & Metal Jet

MATERIAL

PA12 & Stainless Steel 316L

BENEFITS

- Quick Design Iterations
- Enhanced Steerability
- Durability