

US Navy

Cut Costs, Improve Quality & Shorten Lead Time on Production

The US Navy quickly and cost-effectively replaced tail cones for defense systems using ExOne® additive manufacturing.

Customer Challenge

Naval Undersea Warfare Center – Keyport (NUWC) needed a way to quickly and cost-effectively replace the tail cones of their MK 30 anti-submarine mobile targets.

The Solution

NUWC Keyport provided drawings of the part, which were quickly converted to a CAD file. A local foundry designed and had the mold package printed in 12 days, using ExOne's patternless sand printing method. After only 4 weeks, the completed castings were delivered to NUWC Keyport for a cost of \$12,600 each.

ExOne's Competitive Advantage

The completed castings met rigorous performance and non-destructive test inspection requirements. The result was that the US Navy was able to cut costs, improve quality and shorten lead time on production.

About ExOne

ExOne digital part materialization uses three-dimensional printing to create complex molds and cores directly from CAD data for a variety of industries, with accuracies of ± 0.011 in. or ± 0.3 mm. The ExOne process achieves geometric complexity and scale unmatched using conventional casting techniques. The process produces accurate, uniform cores and molds rapidly, significantly reducing lead times.

ExOne operates facilities across the Americas, Europe and Asia.



Specifications

Customer: Naval Undersea Warfare Center – Keyport

Part: Aluminum Tail Cone

Batch Size: 2

Part Size: 22 x 22 x 22 inch

Material: A356 (modified), heat treated to T6

Traditional Method

Pattern-based sand casting with tooling

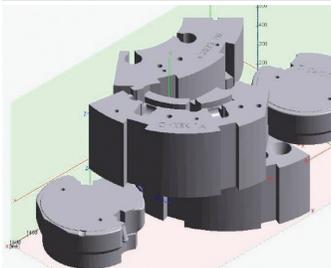
Time: 25 weeks

Cost: \$20,000

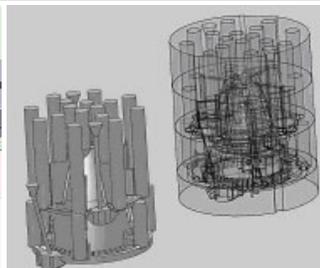
ExOne® Sand Printing Method

Time: 10 weeks from design to finished casting

Cost: \$12,600



CAD Rendering



CAD Rendering

To learn more, contact: www.exone.com