

# Standard Alloys

## Manufacture a 57 Inch Impeller without a Core Box with ExOne's Rapid Casting Process

"...from concept to completion in less than 8 weeks!"



### Customer Challenge

Find a creative technology to significantly shorten the traditional sand casting process, in order to meet critical lead time requirements for a 57 inch impeller casting.

### The Solution

Digital part materialization using ExOne's 3D sand printing technology, produced Standard Alloys' largest RCT core to date – from concept to completion in less than 8 weeks.

### ExOne's Competitive Advantage

The additive manufacturing process automatically eliminates several weeks of core box lead time. CAD digitally-printed accuracy yields improved dynamic and hydraulic balance. Additionally, reductions in post-processing and balancing time (from days to hours) are realized.

### About ExOne

ExOne additive manufacturing technology uses three-dimensional printing to create complex molds and cores directly from CAD data for a variety of industries, with accuracies of  $\pm 0.011$  in. or  $\pm 0.3$  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: Standard Alloys

Batch Size: 1 core, printed in sections and pieced together

Part Size: 57 inch impeller

### Traditional Method

Pattern-based sand casting

Time: several months

### ExOne® Sand Printing Method

Time: sand cores were produced in less than a week, allowing the customer to deliver serviceable impeller castings in under two months.



3D Printed Core



Finished Casting

To learn more, contact: [www.exone.com](http://www.exone.com)