

Fluid Pump Assembly

No tooling? No problem.



CHALLENGE

Fluid pumps are widely used in industrial applications for fluid transfer and low-pressure agricultural spraying. The pump assembly must withstand constant operating pressure while providing long-lasting durability.

When a fluid pump fails or breaks, this causes significant challenges for the manufacturer and users, resulting in equipment downtime and lost revenue.

If spares for this particular part are not warehoused or accessible, the manufacturer must resort to casting, which can take weeks or months.



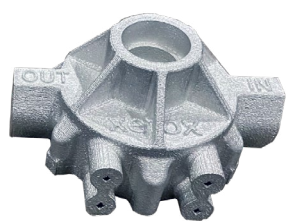
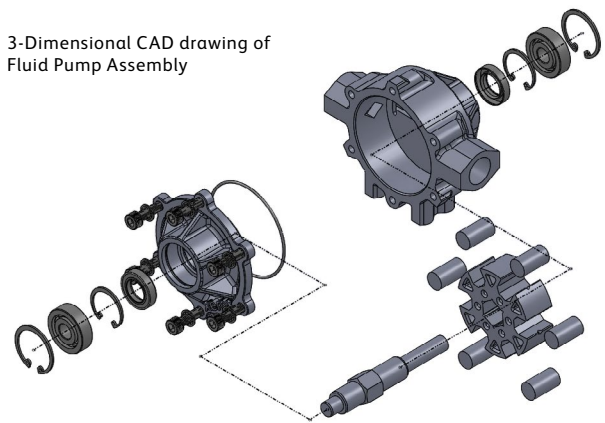
SOLUTION

In under 24 hours, a complete fluid pump assembly can be printed on the Xerox® ElemX® 3D Printer and be immediately available for installation.

AL 4008, which is equivalent to A356 casting materials, is an ideal material choice to supplement broken parts, spares, and repairs for heavy equipment applications.

Furthermore, redesigning parts with the ElemX 3D Printer enables engineers to create new structures that reduce weight and retain strength properties. This is an invaluable component to all 3D printing and an important benefit for the ElemX 3D Printer.

3-Dimensional CAD drawing of Fluid Pump Assembly



Pump Housing
Print Time: 5 H, 25 M
Print Mass – 490 G



Pump Cover
Print Time: 2 H
Print Mass – 155 G



Pump Rotor
Print Time: 1 H, 40 M
Print Mass – 90 G

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RESULTS

PROCESS	LEAD TIMES	COST PROJECTION (1 SET)	COST PROJECTION (10 SETS)
Die Casting	50 Weeks	\$40,000	\$42,000
Sand Casting	36 Weeks	\$23,500	\$24,000
ElemX	1 Set = 1 Day 10 Sets = 10 Days	\$5,400	\$12,000

98%

Faster Lead Time

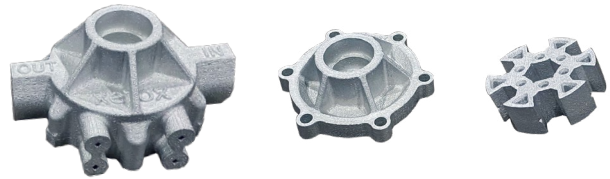
87%

Less Expensive

72%

Less Expensive

- Based on one time buy: Quantity of 1 or 10 Parts
- ElemX projected costs include materials, machining, and equipment amortization



Total Mass: 735 Grams

Print Time: 9 Hours, 10 Minutes

LOOKING FORWARD

Printing with the Xerox® ElemX® 3D Printer provides OEM's, customers, and supply chain managers a new alternative to outdated casting operations.

Instead of waiting weeks, months, or even years to get replacement parts in hand, simply print it on the ElemX 3D Printer.

No downtime. Faster parts in hand.

98% Faster than Casting

Cost-effective

72% Cheaper than Casting

Drop-In Replacement Parts on demand

ElemX



For more information, visit www.xerox.com/3dprinting.