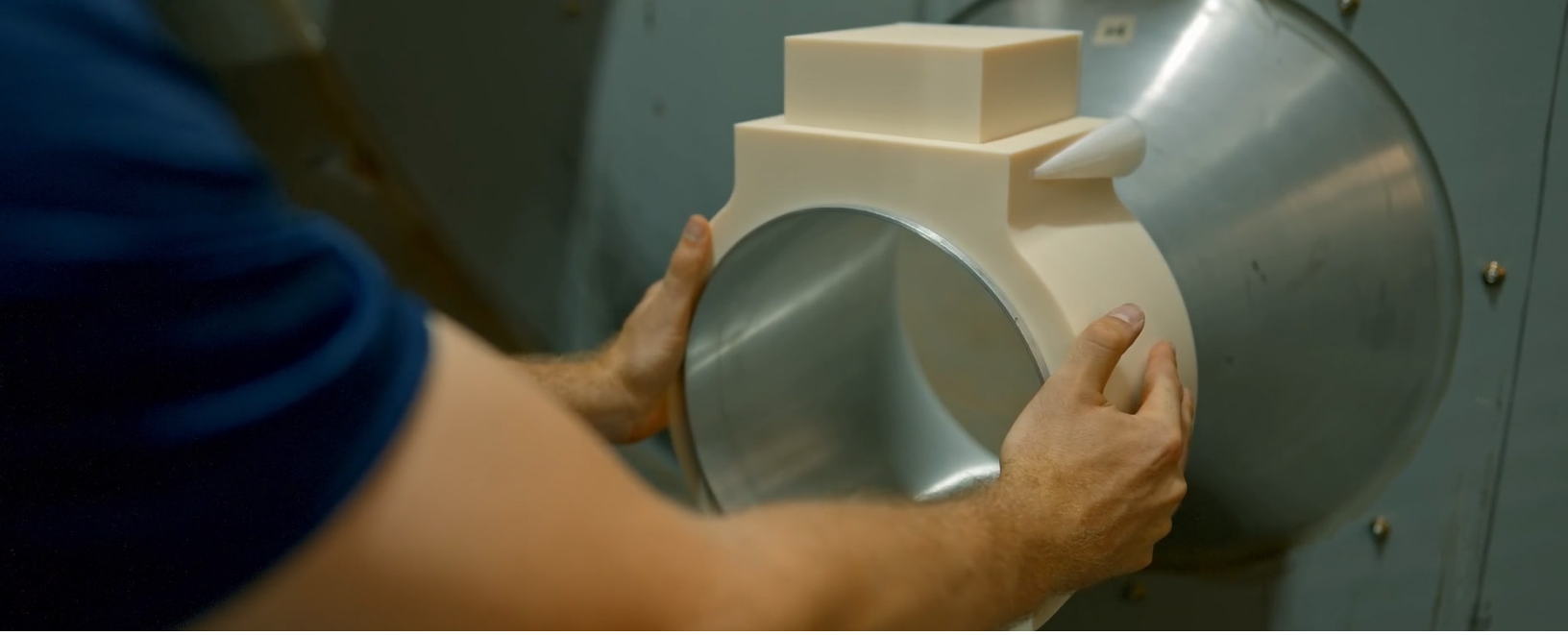


Daikin Applied Americas

Use Case – Nozzle Clamp

Customer Profile

Established in 1924, Daikin Applied is a world-leading provider of air conditioning and heating systems for residential, commercial and industrial properties. With over 100 production facilities worldwide, Daikin employs leading technologies like additive manufacturing to create solutions that improve air comfort and quality.

Challenge

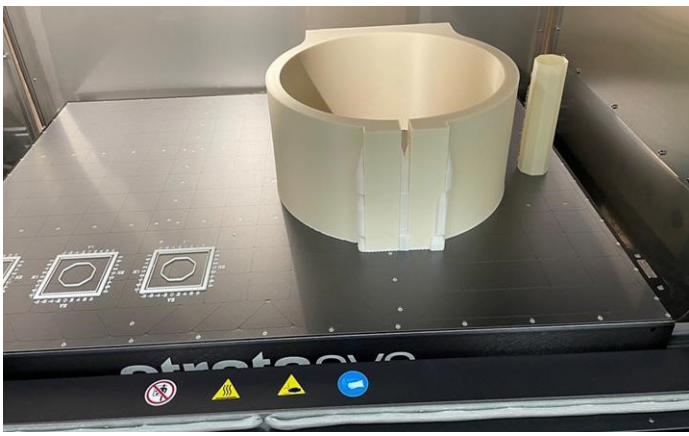
One of the Daikin test chambers uses a nozzle to direct airflow into the chamber. However, the process to open and close the nozzle was a time-consuming part of the test procedure. Engineers designed a solution to attach a closing mechanism to the nozzle using a large clamp. This would reduce labor during test but the clamp was never manufactured due to the high cost of machining the large part from aluminum stock.

Solution

With the procurement of a large-format F770™ FDM® 3D printer, Daikin engineers printed the clamp as an alternative to machining. The F770's large build chamber offered sufficient size to make the large part, providing an economical solution. The clamp was made using ASA thermoplastic and a hexagram infill for a strong but lightweight construction.

Impact

3D printing the clamp with the F770 gave Daikin the ability to permanently change the test procedure and speed up the test process, which has long-term benefits. Additionally, the 3D printed clamp was produced in hours and cost approximately $500 compared to $8000 to machine it from aluminum, a savings of 93%.



Hardware Solution Cost Savings

93%