



Daikin Applied



Use Case – Fan Inlet Funnel

Customer Profile

Established in 1924, Daikin 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

HVAC inlet fan funnels improve fan efficiency and acoustic performance. They are typically made from metal and can be large depending on the particular HVAC system. Prototyping a new metal funnel requires the creation of a machined wood mandrel for approximately \$10,000 with a subsequent cost for each prototype averaging \$175. Lead time to make the mandrel is at least one month.

Solution

With the acquisition of a large-format F770™ FDM® 3D printer, Daikin engineers chose to 3D print the fan inlet funnel prototype, avoiding the need to fabricate expensive tooling. This solution offered a much faster and easier way to make and validate design concepts. The F770 offered sufficient build volume to print the part in once piece with the necessary accuracy.

Impact

3D printing the large fan inlet funnel took 4 days and cost \$800. This equates to an 87% minimum lead time savings and a 92% cost savings compared to machining a new mandrel to form funnel prototypes.



Lead Time Savings



87%

Prototype Material Cost Savings



92%