



# Daikin Applied Americas

## Use Case – HVAC Panel Spacers

### 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

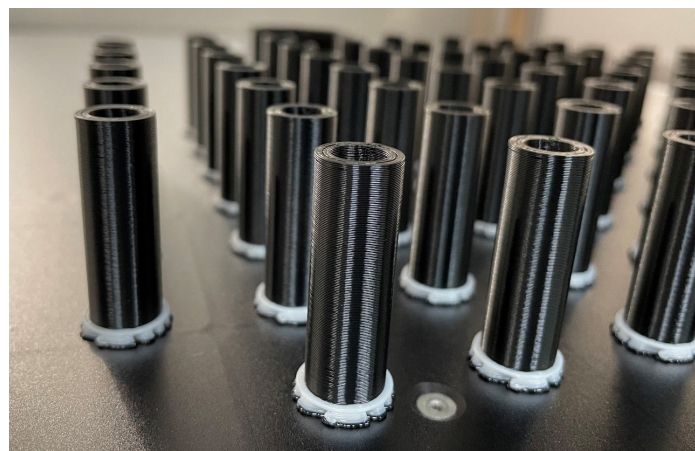
Spacers are used in the panels of HVAC cabinets to distribute the loads created at the screw locations during their installation. However, standard stock spacers usually need modification to fit the design. Custom injection-molded spacers require expensive tooling and have a six-week lead time. Also, molded spacers sometimes have varied tolerances and do not fit properly. Since multiple spacer configurations are usually required for a given design, these methods of spacer fabrication offer slow and/or inconsistent results

### Solution

To expedite a new HVAC cabinet design, Daikin engineers 3D printed the spacers in lieu of using injection molding or modifying stock spacers. Using a large-format F770™ printer, engineers printed the full complement of spacers required for the design in a single print using ABS thermoplastic.

### Impact

3D printing the spacers took 1-2 days instead of 6 weeks which is the typical lead time for injection molded parts, representing a 93% time savings. The F770's large build area allowed engineers to easily print batches of spacers in the proper quantity with the accuracy and low variability needed. It also afforded the ability to quickly iterate and produce different designs to arrive at the best spacer configuration, reducing production labor hours, which wasn't possible with past design schedules.



### Time Savings



**93% vs injection molding**