

# 3D PRINTING FOR MEDICAL DEVICE PROTOTYPING

## CASE STUDY:

### 3D PRINTED FUNCTIONAL MEDICAL DEVICE TRANSFER CASE

#### THE CHALLENGE

An early-stage medical device company required a prototype of a unique instrument procedure case that involved unique seals and hinges that would experience high mechanical forces.

#### OUR SOLUTION

J-Pac created a 3D printed, working prototype that allowed the functionality of the device to be operated and tested under real-world conditions. The prototype included gaskets and small hinges with the actual pins to be incorporated to match the exact design.

#### THE RESULTS

The rapid prototyping of functional parts identified areas in the medical device transfer case that needed design modification. The high material strength of the 3D printed materials also allowed the printer to produce manufacturing-ready fixtures used for process development.



## 3D PRINTING OF FUNCTIONAL COMPONENTS

For a medical device prototype to be as useful as possible, it needs to be more than a visual sample – it needs to function under real-world conditions. J-Pac offers 3D printing in materials that can be 1.4 times stronger than ABS (acrylonitrile butadiene styrene) and used as a replacement for machined aluminum.

## RAPID PROTOTYPING

J-Pac can 3D print near aluminum strength components in hours and at a fraction of the cost of hard tooling. This allows engineers to quickly test and modify designs through many iterations that would be impractical for traditional machining. Development time can be reduced by months.

## ASSISTING MANUFACTURING PROCESS DEVELOPMENT

Due to the materials' unique strength, high temperature, and chemical resistance, it enables the rapid production of manufacturing fixtures and tooling that perfectly match the components' geometry. J-Pac can work with the customer in our labs to develop manufacturing processes that are efficient and produce the highest quality parts.