The Hollow Man

Background

We are often asked about using 3D scanning to digitize legacy products. This is a smart move for many of our clients, as it opens up a world of possibilities for new manufacturing processes, such as CNC machining, 3D printing, laser cutting and injection molding, which can save time and achieve production quantities that would be impossible using traditional methods. With a high quality digital 3D model, you can source manufacturing anywhere in the world, and apply the most modern manufacturing methods to your product design, no matter how complicated the shape. When a client came to us with a hand cast fiberglass model of a medical form, we knew just what to do to make it suitable for injection molding.

Our Process

The form came to our shop in two pieces. The torso and arm were separate, but joined together with a single bolted fastener. We first scanned each piece separately in order to capture all of the mating surfaces, and then performed a second scan as an assembly, to ensure that both pieces would be aligned correctly in the new digital reconstruction.

The final design was a thin walled shell. We first created a high quality 3D CAD surface of the exterior finished surface, and then used our digital tools to offset the this surface and create a finished shape that had a constant wall thickness suitable for injection molding. We also trimmed up some of the round and square features to ensure that they were mechanically perfect, and cleaned up the arm joint interface, to provide the option for an injection molded locking mechanism to modernize the design.

The Results

The resulting model was an exact replica of the original form, and a fully formed 3D solid model compatible with common CAD programs like SolidWorks and Inventor. We have decades of experience working with digital 3D CAD data, and make sure that the data we send will work with whatever manufacturing process you hope to apply. We provided 3D models in both STEP and IGES format, and passed the data on to our client to make the final adjustments for injection molding.