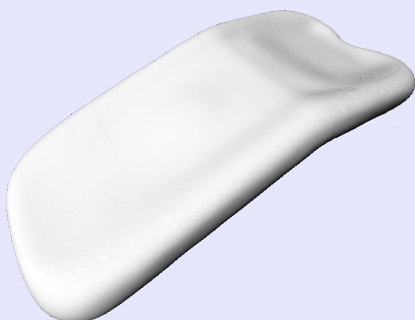


Hand Formed Molds in a Digital World

Background

When a client needed to reproduce a new set of molds to support their existing product line, there was no 3D data available. The complex, organic shapes had subtle contours that would be impossible to measure without the benefit of 3D scanning.

Our Process



We brought the newly resurfaced fiberglass mold in to our facility for scanning. This piece was fairly large, over 48" in one direction, so we took a series of surface scans and stitched them back together to create a continuous mesh of the exterior surface of the part.

The next step was to bring the data into our reverse engineering package to begin rebuilding the part for CNC tooling. We used the scan as a reference, and began reconstructing the shape as high-quality, smooth NURBS type surfaces. Since the original molds were fabricated and finished by hand, there were some slight deviations from the left and right sides. We worked with the data to produce truly symmetrical parts that maintained continuity, while holding tight to the original profile of the hand cut molds. Once we were happy with the surfaces, we used our parametric CAD package to recreate some of the remaining features of the part.

The Results

By combining high quality surfacing, and parametric modeling, we were able to create a clean, well constructed CAD solid that could be easily imported into any CAD package, and modified in the future. This unique approach resulted in a high-quality continuous surface that not only reproduced the original molds, but also provided a digital surface that was perfect for generating CNC toolpaths and building brand new molds.

