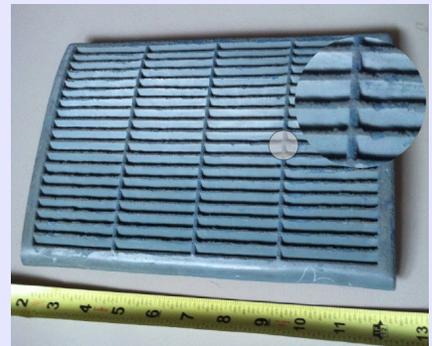


Global Inspection Solutions

Plastic Surgery

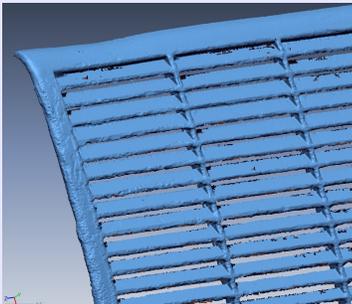
Background

We are often asked about 3D printing and how it can be used to improve on traditional manufacturing methods. Many of the 3D scans and 3D reconstruction projects we work on go on to be reproduced as a 3D print, and 3D printing is a great way to reproduce small volumes of complicated parts that would otherwise be impossible. When Pat Krake came to us with a very hard to find plastic grill as part of his car restoration project, we helped him through the process of reproducing it using 3D printing technology.



Our Process

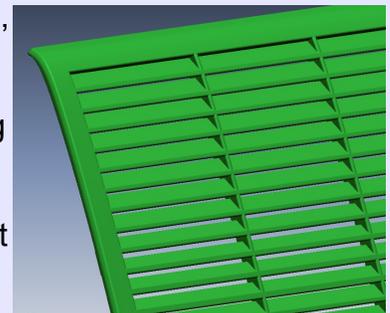
Not every part that comes to us for 3D scanning is perfect, nor does it need to be. The grill was severely eroded and warped after nearly 50 years of exposure to the sun, and the remaining plastic was brittle, and deteriorating rapidly.



We first create a detailed 3D scan of the entire grill, shown on the left, using our non-contact white light scanning process. The heavy wear and warp showed clearly in our detailed scan, but our plan was to reconstruct a brand new shape, using the original scan as a reference. That means we could straighten out the warped edges, rebuild any missing features, and adjust the part to fit as it

was originally designed.

The resulting CAD model, shown on the right was a perfect reproduction of a worn out part, ready for 3D printing.



The Results



We chose to use a sintered nylon 3D printing process to capture the fine detail of the original grill, while providing a strong, flexible part that could be installed in the vehicle without breaking. The new part snapped perfectly into place, and hugged the contours of the dashboard as it was originally designed. With a little hand sanding, the new grill would soon be ready for paint and final finish. A beautiful application of 3D scanning and 3D printing, bringing a new life to aging plastic.