

Industrial Etching Case Study: Next generation golf club design

Where did a world leader in golf club design and manufacturing go to test out prototypes for new club head groove designs? They turned to ChemArt as one of the premier experts in Photo-chemical Machining (PCM) or etching, otherwise known as a rapid controlled subtractive process. Photo-chemical machining is a mix between photography and chemistry and enables metals and alloys to be etched or cut into precise depths or patterns to meet specific designs and tolerances. In short, the metals/alloys are cleaned and a resist layer of film, either liquid or dry, is applied to the surface. By using a photo-tool, images or designs are transferred with high intensity light to the metal surface and will create the pattern or design on the metal. The next step of developing will cure the resist layer and the portions that are not image transferred are removed. The remaining pattern or design will counteract, or resist, the acid used to dissolve the metal and will allow for controlled etching to meet the design criteria.



The concept of the re-design of the groove face was to allow for greater spin and control of the path of the stuck ball while also trying to increase the size of the “sweet spot” of the club for more forgiveness at the point of impact. The challenge at hand was to test out a proof of concept for a series of new groove designs which affected the pattern and depths right on to the club face. Rather than go to a full production run of clubs, the manufacturer was in search of a partner that could replicate the concept onto existing club faces. ChemArt, with its expertise in chemical etching, was able to reproduce the designs at a fraction of the cost of a full production run. PCM has several benefits over other fabrication and cutting alternatives such as rapid prototyping, low cost tooling and a burr free finish, all of which were crucial in this project’s scope of work.

For over 30 years ChemArt has been an innovative leader in the world of PCM and has succeeded by maintaining a high level of quality and unsurpassed customer service. This successful project is just one example of ChemArt’s team-based approach and their ability to think “outside the box” and identify unique processes to meet the requirements and expectations of the customer.

To learn more about the products and services ChemArt specializes in, please visit www.chemart.com or call us at 1-800-521-5001 to speak to PCM expert.