



Percussor

ElectraGraphic nameplate

The challenge

Headquartered in Florida, Erchonia is a global leader in low level laser therapy and technologies. They approached GM Nameplate (GMN) to manufacture a nameplate for their latest product named the Percussor, a portable therapeutic device. With the Percussor being one of their premium offerings, Erchonia wanted a glitzy, jewelry-quality nameplate to complement the new device.

They also wanted a substantial portion of the nameplate to be gold-plated and generally, a larger plated surface equals larger room for flaws. Hence, one of the challenges was to ensure that the plated surface was free of all contaminants and dimples. However, the most significant challenge encountered was marking a unique serial number on every nameplate in a time-effective manner. Since the Percussor is a hand-held device, the nameplate also had to be lightweight and easy to clean.

Project goals

- **Manufacture a high-end nameplate combining different decorative textures and finishes**
- **Ensure proper adhesion of the plating layers to avoid flaking and chipping**
- **Mark a unique serial number on every nameplate**

The solution

Without losing sight of Erchonia's design requirements, GMN flexed its creative muscles to tailor a perfect solution: an ElectraGraphic nameplate with laser-marked serial numbers. ElectraGraphics is the process of plating stainless steel with nickel, chrome or gold, to create a raised or recessed image or pattern. A 0.018" sheet of brushed stainless steel formed the

CASE STUDY

base of the nameplate. After thoroughly cleaning the sheets in a soapy bath, the text and the interlacing lines were screen printed with black ink.

The printed sheets were then transported to a dark room where the entire sheet was lam-

PARTS PER YEAR:

5,000+

inated with a photoresist, a light-sensitive material. The desired plating pattern was then formed on it using a film-tool on a light table. Simply put, the areas that had to be gold-plated were masked, so that they were not exposed to the light. The remaining portion of the nameplate was exposed to light, thus

curing the photoresist. The image of the plating pattern was then developed by washing the sheets with a high pH solution (water and soda ash). This reacted with the resist from the area unexposed to light, and exposed the bare metal.

The steel sheets then made their way to the electroplating room where they were electro-cleaned in an anodic treatment bath. This pre-treatment cleansing process is extremely crucial because it cleans the surface of any contaminants which further impacts the adherence of the plating layers. The cleaner the surface, the more superior is the adherence. The sheet was then dipped in four different plating tanks: nickel wood strike, copper, nickel sulfate and 24-karat gold. Throughout the process, the length of immersion, voltage and temperature were closely controlled. Electroplating not only increases the aesthetic appeal of the part, but also protects the part from rust and corrosion. The remaining photo-resist on the stainless steel sheet was chemically stripped off at the end. The technical experts at GMN fully comprehend the nuances of electroplating and the minute details that impact the longevity of the plating layers. This extensive knowledge was what brought these immaculate nameplates to life.

The steel sheets were die-cut in a precise medallion shape and the adhesive was hand-applied on the rear side. By cutting out the required shape before applying the adhesive, it prevented the glue from oozing out from all the sides, resulting in a firmer grip.

Once the nameplate was ready, then came the most challenging part of marking a unique serial number on every nameplate. Screen printing these numbers would require a separate artwork file for each and every piece, making the entire process not only expensive, but also time-consuming. Thanks to the state-of-the-art machinery and technologies at GMN, we found the solution in our latest laser marking machine. The machine demanded

- ✓ **SCREEN PRINTING**
- ✓ **PHOTO IMAGING**
- ✓ **DECORATIVE GOLD PLATING**
- ✓ **DIE-CUTTING**
- ✓ **LASER MARKING**

some initial set-up time to ensure the correct placement of the digits on the nameplate, but made the rest of the process extremely straightforward and time efficient. The laser beam burnt the numbers into the materials leaving behind a defined and permanent marking. This software-controlled laser marking wiped out any possibility of errors, such as skipping a serial number or marking two nameplates with the same serial number.

GMN's diverse capabilities allowed for the development and manufacturing of the entire ElectraGraphic nameplate under one roof: screen printing, photo-imaging, decorative gold plating, die-cutting and laser marking. By controlling all of these processes in-house, GMN delivered nameplates of the utmost quality and consistency.

As a custom-manufacturer of nameplates, GMN brings together a blend of expertise, quality and manufacturing capabilities. From domed to electroformed nameplates, the possibilities of shapes, sizes, materials, finishes and textures are endless.



CASE STUDY