

## Laser Cutting vs. Stamping

Two competing technologies in the manufacturing of precision 2D parts are stamping and laser cutting. They both have their pros and cons and undoubtedly are a preference to some. I have experience as a provider of laser cut manufacturing, but I hope to give both technologies their due notice and allow you, to make informed decisions based on what each technology offers.

Let's start with the more common way of manufacturing high volume 2D parts: stamping. The Lydians from the 7<sup>th</sup> century BC are credited with the first to use stamping and produced coins. This technique of a mold of one face and a striking stamp with the other face, seems to be the technology till about 1550, A.D. when a German named Marx Schwab used manual screw turning to induce pressure. By the 1890's and the industrial revolution, steam powered presses created faster and cheaper manufacturing that became extremely popular. As technology and progress is made to develop the raw materials, metal stamping has found a key place in manufacturing. The industry itself is anticipated to grow to 300 billion by 2025.

Some advantages of metal stamping are:

- The ability to form shapes while producing the pressed parts.
- Thicker metals can be stamped and cost for the repeatability of the stamping process.

There are factors to keep in mind when considering this technology:

- Maintenance of the machines, the replacing of tools and dies as they wear out.
- the process can also inject metal fatigue if not done properly or if the incorrect alloy is used.

Laser cutting of precision parts and of materials has been around for some time now, but it does not have the long history of metal stamping. Laser is the junior technology to stamping, but it has a growing line of success and numerous manufacturers of laser technology indicate that it is here to stay. Lasers cut with energy, with light, and use different types of wavelengths and wattage to meet the demands of industry and allow laser technology to compete with more established processes. The lasers I am familiar with are YAG UV and YAG IR lasers.

The advantages that lasers have over stamping include:

- Stress-free processing on the material.
- Clean and accurate edges along with the ability to nest parts closely and yield more per sheet.
- The ability to run smaller R&D runs without the need for tooling or dies.

Some disadvantages of lasers are:

- Higher cost – though many production runs are now done by laser, they do process in many cases at a slower rate.

- There can be limits on the thickness some lasers have and there can be some chemical altering of the cut edge if the incorrect alloy is used.

I like both technologies and when I view both, they each have their place. Sometimes they end up supporting each other as I have seen from time to time. Laser is many times a first choice to develop a new project that has many iterations in R&D. If the end goal is production, sometimes the preferred method is to take the project into production with stamping. It can be a win for both.

Please read more about at:

[Laser Cutting vs. Stamping - A-Laser Precision Laser Cutting](#)

[A-Laser Precision Laser Cutting - Laser Ablation, UV and IR Lasers](#)