

# shortcut

Geben Sie Ihren Plänen eine Form

## Types of laser processing.

### **CUTTING / Cutting out contours.**

The laser beam travels along the center of the drawn line, vaporizing the material. This results in a cutting width of approx. 0.15mm. For very precise parts, the cutting contours should be offset accordingly. Outer contours 0.075mm outwards and for inner contours 0.075mm inwards.

Due to the thin laser beam, almost radius-free inner corners are possible.

Due to the fact that the laser burns the material, different cutting results are achieved with different materials.

With cardboard and wood, for example, a brown to black cut edge is produced, whereas acrylic glass melts and thus receives a shiny edge.

Because the laser beam is focused on the center of the material, a right-angled cutting edge is not obtained. The thicker the material, the more visible this effect becomes.

### **VEKTORGRAVUR / line engraving on surfaces**

This is essentially the same process as cutting, except that the material is not cut but the surface is marked (scribed) by reducing the power.

The laser beam follows a drawn line in the center and leaves an engraving in the beam width of 0.15mm. On materials such as cardboard and wood, these engravings are clearly visible, as the engraving lines turn brown to black.

This process can be used, for example, to display lettering as outline engraving.

Example of outline engraving.

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## **RASTER ENGRAVING/ Surface engraving on surfaces**

In this process, two-dimensional engravings are produced.

The laser then works in a similar way to an inkjet printer and lines off the entire graphic from top to bottom.

In this way, fonts, for example, can be displayed as a full-surface engraving.

The laser beam has a diameter of 0.15mm.

This means that this process can quickly become cost-intensive for larger graphics, as the laser has to pass over the graphic correspondingly often.

Example of raster engraving.

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## **NOTE ON ENGRAVING**

It is not possible to achieve an exactly defined engraving depth.

To understand:

The laser passes over the material at a constant speed with constant beam power.

Since e.g. wood is not homogeneous, but has a grain / annual rings -

where the darker areas are denser and harder than the lighter softer ones -

the laser beam penetrates the material to different depths and the engraving thus becomes different deep.

**Instructions for creating a drawing and file templates can be found in our tutorials.**